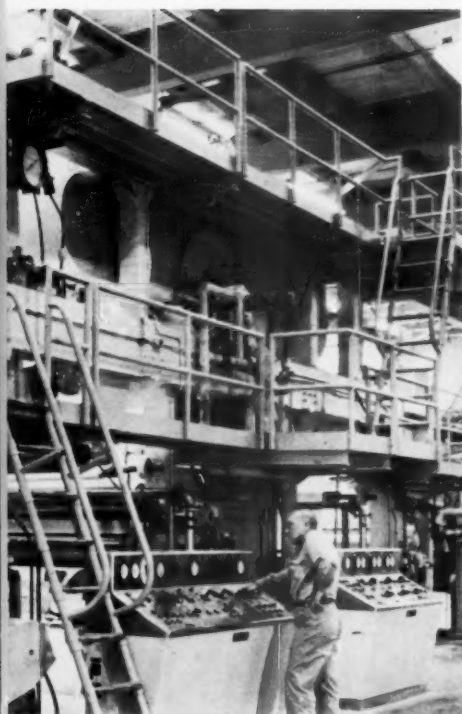


April 17, 1961

# ***PULP & PAPER***



**Blade coating: why**  
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**Scott enters printing**  
paper field 3

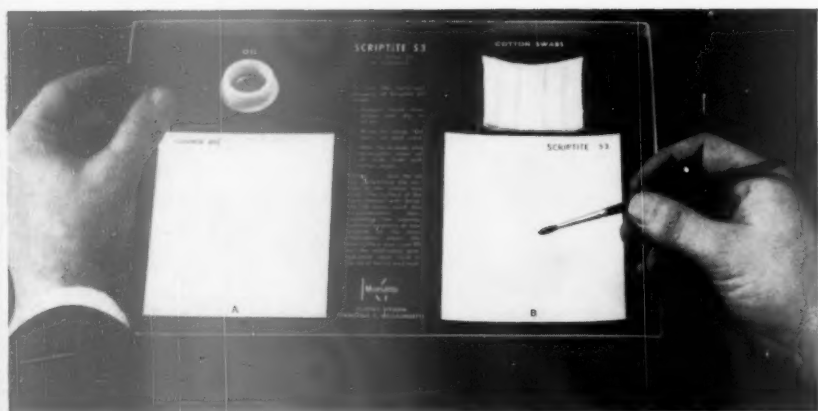
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This 30-second test proves the superior  
hold-out qualities of new

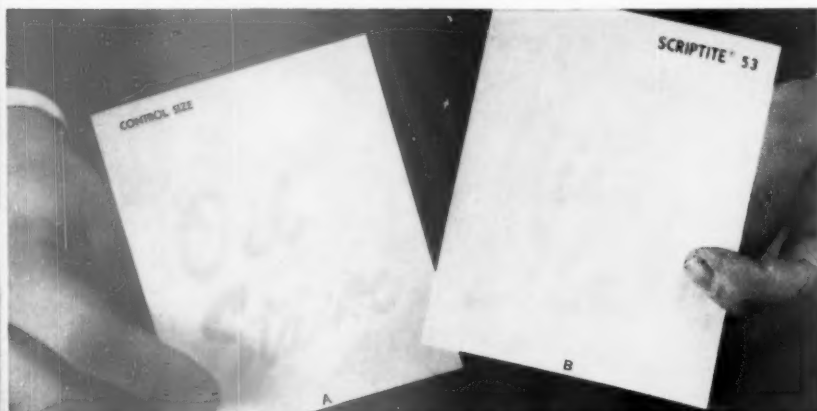
# SCRIPTITE® 53



Paperboard A has a starch ether surface size. Paperboard B was treated with new Scriptite 53 surface size.



OIL was brushed on both A and B, allowed to dry 30 seconds, then wiped off.



Note how oil has penetrated surface of card A far more than on card B, demonstrating the superior hold-out property of Scriptite 53. You can make this simple test yourself. Ask your Monsanto representative to show you the special Scriptite 53 test kit.

Food board has clearer, brighter appearance when it has been treated with Scriptite 53. This new Monsanto surface size improves wax hold-out on food board and light waxing grades of paper for packaging and laminating. Scriptite 53 keeps the wax coating evenly distributed on the surface of the board, stopping excessive internal penetration of the coating which gives food board a dull greyiness.

Scriptite 53 has particular application for milk container and frozen food board because of its excellent lactic acid resistance. It acts as a barrier to the acid even when wax coating has been penetrated, preventing carton bulge. Scriptite 53 is exempt from regulatory provisions of the Food Additives Amendment by virtue of FDA's confirmation of "No reasonable expectation of migration when used as a wax hold-out resin." For additional data on Scriptite 53 or board samples write Monsanto Chemical Company, Plastics Division, Room 811, Springfield 2, Massachusetts.



**MONSANTO** INITIATOR IN **PLASTICS**

# April 17, 1961

VOLUME 35, NUMBER 8

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PAPER**

PUBLISHED EVERY OTHER WEEK

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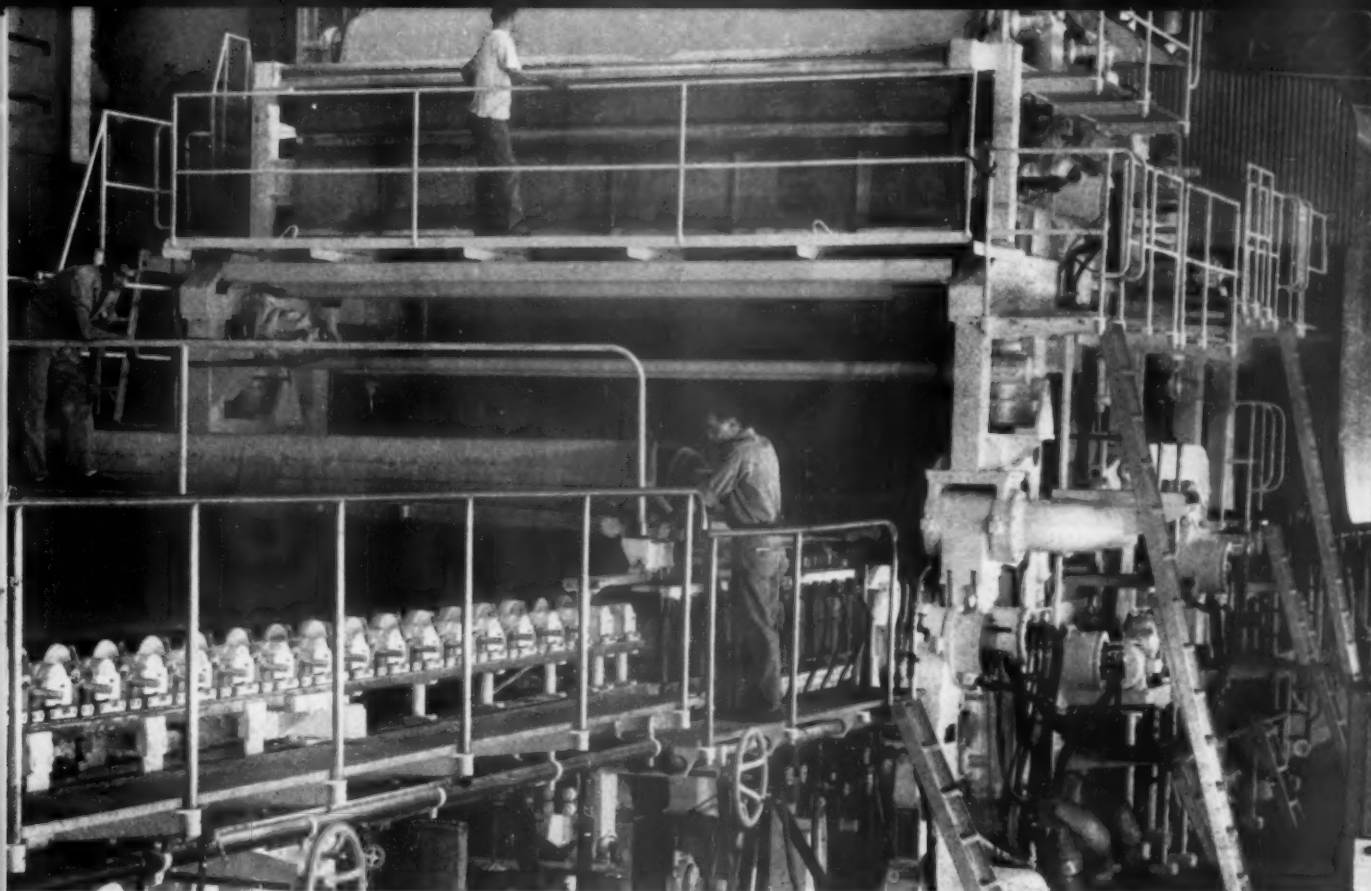
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P. H. Glatfelter Co., Spring Grove, Penna.

## How 5 grade changes a day make Glatfelter more competitive

Flexibility is synonymous with Glatfelter's No. 7 188" machine. Their ability to make up to 5 changeovers ranging from 13 lb. bond to 110 lb. drinking cup stock means orders are shipped within hours, overruns are unnecessary and warehousing is eliminated. Rice Barton engineering has provided this versatility which makes

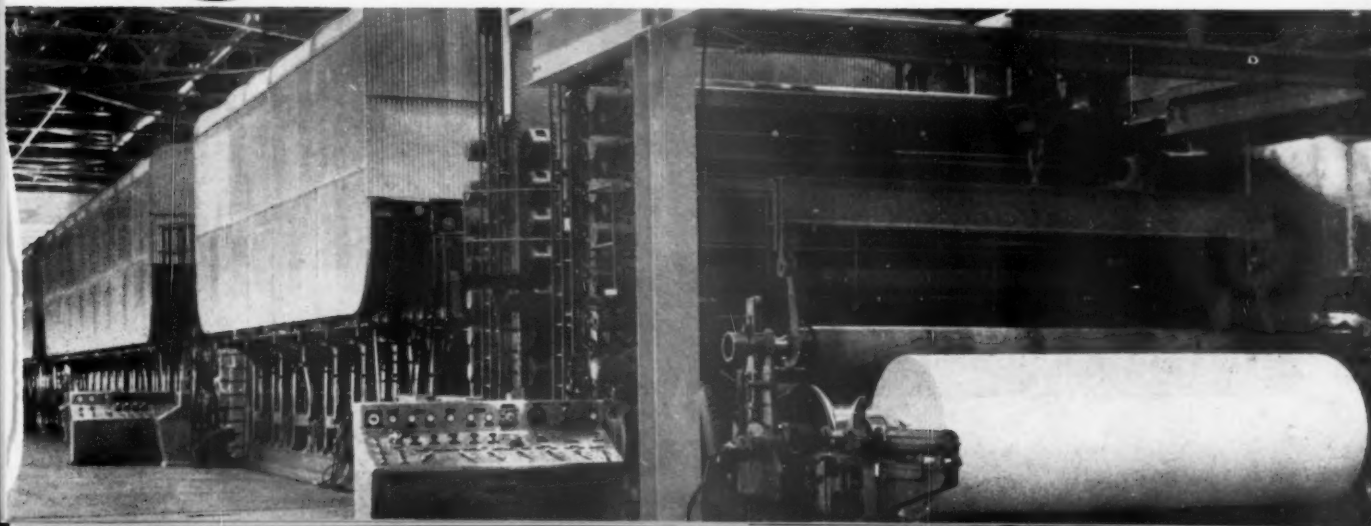
short runs profitable and improves the mill's competitive position.

Overcoming unusual papermaking requirements with specialty machines of the most modern design has shown Rice Barton's ability as a leading manufacturer. Consult us when planning your next modernization or expansion.



**RICE BARTON** Corporation, Worcester, Mass.

Fourdriniers • Press Sections • Dryer Sections • Calenders and Supercalenders • Reels • Winders • Head Boxes • Size Presses • Breaker Stocks  
Differential Draw Control and Cone Pulley Drives • Pulping Equipment • High Velocity Air Dryers • Trailing Blade Coaters • Fibre-Flash Drying Systems



# what happens when you **CENTRIFLE** your stock ?

1. You keep junk and dirt like this out of your *paper*. It's caught and removed right at the pulpers, before it can get broken up into fine dirt and cause rejects and breaks.

2. You keep junk and dirt like this out of your papermaking *equipment*, before it eats into Jordans, refiners, pumps, screens, wires, felts, rolls and cutters.

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## BIRD CENTRIFLERS



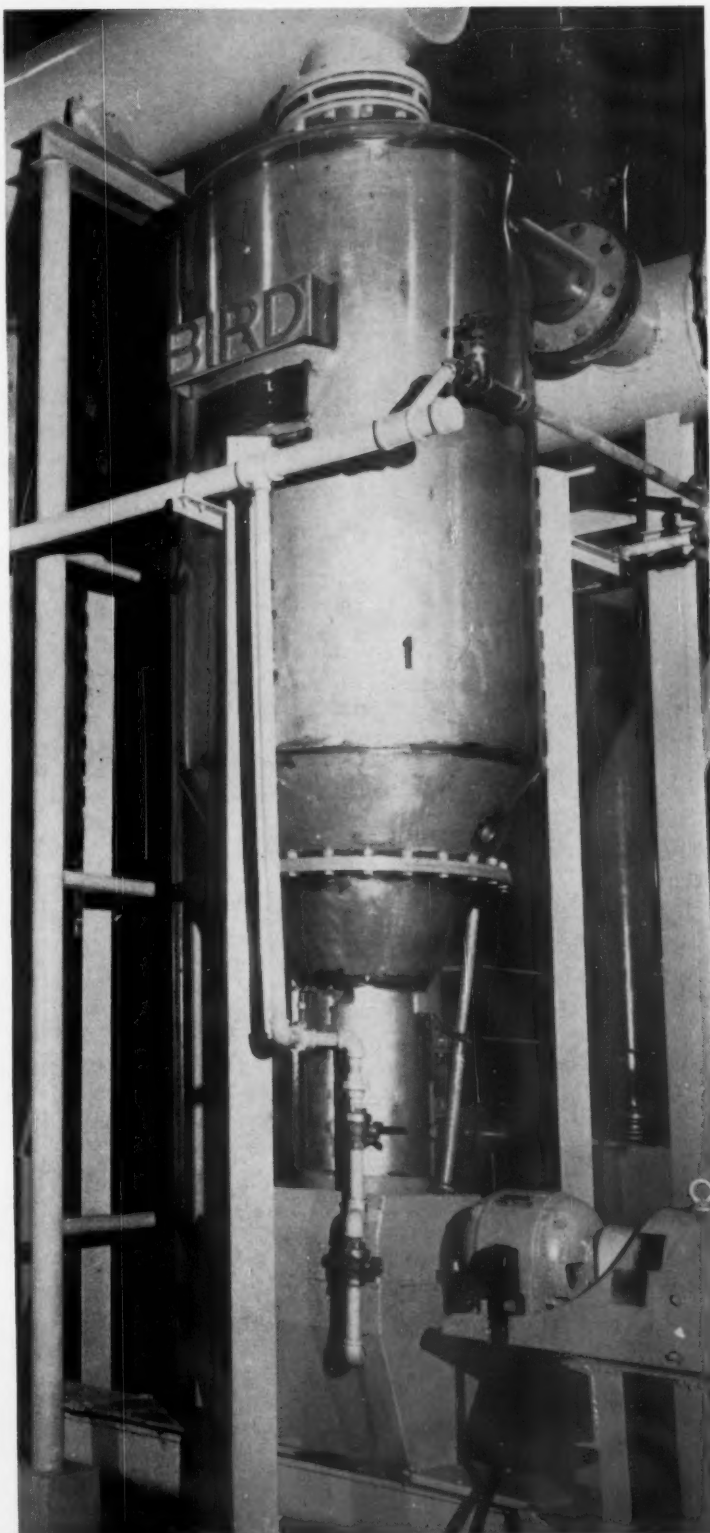
Glass from kraft waste



Metal, wood, rubber, stone, sand



Just plain dirt — fine and coarse



**BIRD**  
MACHINE COMPANY

**SOUTH WALPOLE, MASS.**

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Canadian Manufacturers of Bird Machinery  
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

## NEWS DIGEST...

**U.S. paper production averaged 89.6%** of capacity for 1st quarter of 1961, according to APPA. Paperboard production was at rate of 90%, says NPA. Paper board industry produced some 3,919,227 tons in 1st quarter, or at annual rate of about 15,676,908 tons.

**Sales up, profits down, says APPA** survey of 83 pulp and paper companies. Total sales of these companies were 5.4% greater in 1960 than 1959. Net income after taxes, however, was down 5.3%. These companies rack up almost 50% total sales of paper and allied industry.

**Exports of paper, paperboard and products** for Jan.-Feb. were up 21%, to 168,820 tons. Paper exports were up 5.8% to 54,014 tons; paperboard up 36.5% to 86,892 tons.

**New partnership in bleached paperboard** has been formed by International Paper Co. and Lily-Tulip Cup Corp. The new company, Red River Paper Mills, Inc., will buy a board machine from IP plus some land at Springhill, La., near IP's mill. The 250 tpd machine can produce food-board for paper cups, food containers, milk containers, frozen food cartons plus tag, file folder and index Bristol.

**U.S. pulp exports are up 30%** first two months of 1961, says U.S. Pulp Producers. Production was down 2% and domestic shipments were down 9%. Exports to Latin America were up

93%, to Europe 23% and to Asia, Africa and Pacific, 29%.

**Wilderness bill question right now** is, when will it pass, says a Washington observer. Or will it? It's hard to figure out how strong sentiment in both houses is to pass it. It possibly might not make it, especially if the case for Outdoor Recreation Resources Review Commission can be made effectively, since its report won't appear before early 1962.

**"If you can't beat 'em, join 'em"** is exemplified again by Container Corp. of America which has bought a plastics molding plant in Los Angeles from Cal-Dak Co., to make rigid plastic containers and other custom-molded packaging materials for foods, household products, etc. Several paper manufacturers have branched out into plastics—an important industry trend.

**Pulpwood exemptions will remain** in whatever minimum wage legislation Congress finally passes. When President Kennedy lost a dramatic one-vote decision to Southern Democrats and Northern Republicans, their bill included the 12-man forestry and logging and seasonal exemptions, just as his did. A revised Senate (S.1457) substitute for the original Administration bill (S.895) also retains the exemptions, which apply to virtually all pulpwood production crews. If they weren't exempted, the timekeeping job would be a tremendous expense, explain industry leaders.

## ....INDUSTRY GROWTH

# Scott in print paper field

with start of on-machine two-side coating in Mobile mill

STARTUP of Scott Paper Co.'s new No. 9 Fourdrinier machine at Mobile, Alabama, marks this company's entry into the lightweight printing and offset papers field. It will make 200 tons a day of these papers, using carefully blended pulps made at Mobile.

Scott's already closely-developed relationship with numerous paper merchant-distributors all over the country, it reckons, will give it a flying head-start in reaching and supplying printers, 80% of whom have less than 20 employees in their print shops.

This Chester, Pa., company, so far known primarily for its trade-marked consumer-market tissues and towel papers, considered its plunge into the printing paper field so important that it put on a breakfast "Paper Play for Profit," as professionally done as any Broadway miniature musical show, with chorus girls as machine crew and a modernistic stage version of a paper machine, to announce its plans at the recent NPTA convention in New York. Even at 8 a.m., 245 delegates turned up as guests.

G. Willing "Wing" Pepper, Scott vice president and director, took part in the show, explaining that Scott looks for new markets for a quarter million tons of "cultural papers"—offset, bond and writing, tablet and envelope—in each of the next five years. It is conservatively estimated that 25 to 30 new web offset presses will be put into operation each of these next five years, he said.

Offset printing, said Mr. Pepper, will increase 15 to 20% each year.

Beloit Iron Works built the new No.





# LOOK- ALIKES...



but only  
**SIMONDS Chipper Knives**  
come with the

## "MILLION DOLLAR" SERVICE

*It's a well-known fact!* Many thousands of dollars have been saved by mills with Simonds Chipper Knives and Simonds Technical Chipper Service.

Increases in yield of clean-cut, unbruised chips have ranged from 1 to 2% all the way up to a startling 30%. Savings in wood costs run into the hundreds of thousands of dollars every year.

Sound unbelievable? Why not find out for yourself!

"The Man From Simonds" knows how to squeeze out the most from any chipper operation. And Simonds Knives have the extra toughness and edge-holding quality to maintain the savings. What's more, Simonds is "right around the corner" and can give you fast, dependable delivery!

Learn the full money-saving facts. Write for details today.

### LET'S LOOK AT THE RECORD:

"Simonds Chipper Service increased our chip yield 8%", says one *Southeast Mill*.

"Simonds recommended changes increased our acceptable chips by 30%", says a *New England Mill*.

"Savings of over \$50,000.00 a year were the result of Simonds technical help", says another well-known company.



**SIMONDS**  
SAW AND STEEL CO.

FITCHBURG, MASSACHUSETTS

Buy through your local Simonds Distributor for

For Local Stocks — Local Speed — Local Skill

Factory Branches in Union, N. J., Chicago, Shreveport, La., Los Angeles, San Francisco, Portland, Ore. • Canadian Factory in Granby, Que. • Simonds Divisions: Simonds Steel Mill, Lockport, N. Y.; Heller Tool Co., Newcomerstown, Ohio; Simonds Abrasive Co., Philadelphia, Pa. and Arvida, Que., Can.

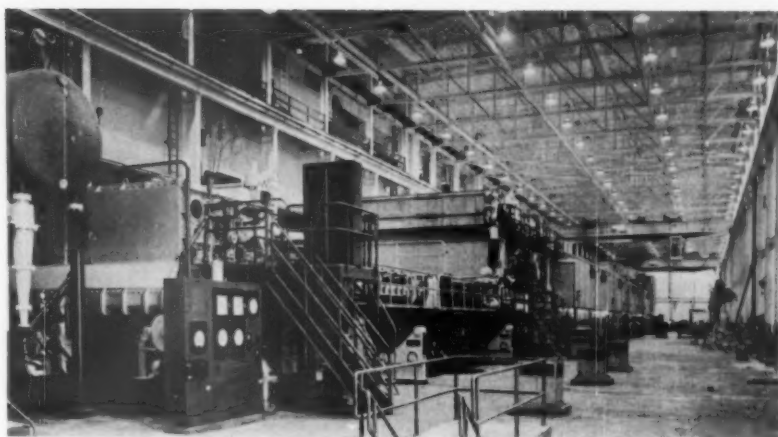


9 machine, equipped for on-machine coating on both sides of the paper. The machine has three stations where special pre-coating may be applied.

The machine has a wire width of 20 feet and is 137 feet long. Its speed range is up to 2,000 feet per minute. The suction press is also a smoothing press. There are four dryer sections.

Scott spent some \$20,000,000 on the new development.

The girls who ran the machine on stage at the breakfast show were mighty pretty—when they were dancing and when they handed out a packaged description of the project and other Scott activities to guests at their tables. Also Scott's venture in printing papers has an "exciting outlook"—said "Wing" Pepper ■



NEW BELOIT MACHINE, with 20 ft. wide wire, at Mobile.

## "Not just a new machine, but a new concept"

By G. WILLING PEPPER, Vice President, Scott Paper Co.

NEW YORK—There has been too much defeatist talk in our industry in recent years. We tend to focus our attention on the negative aspects of daily business and forget to raise our sights to truly exciting features of the American paper economy.

Operating today at 92½% of capacity, we are only a few percentage points from our absolute capacity. In terms of tons, we sold 39,350,000 tons of paper and board in 1960 compared to 34,778,000 tons sold in 1955—an increase of 13.1%.

In the great vast complex of our Mobile mill, we are starting up a new paper machine to make H&W papers. We think that the timing is perfect—a new, wide high-speed machine, expertly engineered, to produce cultural papers of the highest quality—from pulps which are made in Mobile—pulps which have been the quality standard in the South since 1940.

**The cultural paper market** is on the march. We have to look only to Wall Street to sense the quickening interest in publishing of every kind. The printing press manufacturers are optimistic and, according to "Paper and Paper Products," printing machinery sales rose 15% in 1960 and a further increase of 5%-8% is expected in 1961. Paper sales to the industry will rise 5% in 1961 on top of the 4% increase in 1960—a so-called recession year.

Against this optimistic background, Scott is bringing in its new machine at Mobile to produce an expanded



MR. PEPPER

line of H&W quality papers. Our Market Research department estimates that sales of cultural papers will increase at the rate of 250,000 tons per year between now and 1965—uncoated offset will increase by 50,000 tons per year, bond and writing by 35,000 and 40,000 tons respectively, tablet by 20,000 tons and envelope by 20,000 tons per year.

**There are 16,735 printing plants** in America and 84% of these plants have less than 20 employees, 97% less than 100 employees.

To Scott this means just one thing: Cultural papers must be sold through merchants to reach the printers of America. I believe in building our business with merchants because I believe that it is the only intelligent way to reach the crossroads in America.

Those who have worked with us in the distribution of industrial papers, know that our policies have been ham-

pered out with our Merchant Advisory Committee. They know we have a reputation for sticking by our merchants and they know that we, and they, are able to expand our business together each year, in spite of recessions, because our products, our policies, and our sales power are geared to a common objective.

I can assure you that this same philosophy will prevail in the expanded distribution of H&W papers through merchants.

**Of the various products** which we will make on this new machine, we will give special attention to the various grades of offset. The growth trend in the sale of offset shows an exciting picture. It is conservatively estimated that 25 to 30 new web offset presses will be put into operation during each of the next five years. It is further estimated that paper consumption for web offset printing will increase by 15% to 20% in each year through 1965.

**Leadership in any field** imposes an exacting form of discipline. One phase of this discipline requires intensive research—research which is never satisfied—never relaxes. We believe in research because we know that it is essential to survive—vital to progress and basic to success in every phase of commercial life.

We are not just announcing another new paper machine today. We are introducing a new concept of paper-making and paper distribution. ■



*"On Stream to lock 'em in or out—longer."*

## 14,000,000 LBS. RESYN® 3600 POLYVINYLIDENE CHLORIDE LATEX FOR PROTECTIVE COATINGS

Our 14,000,000 pound RESYN 3600 plant is now "on stream" at Meredosia, Illinois. This marks the first commercial production of National's water dispersed polyvinylidene chloride and brings combined capacity at Meredosia to more than 80 million pounds of polymer emulsions and latices annually.

RESYN 3600 promises a revolution in protective coatings with simple low cost application by high speed coating machines or spraying. Its barrier properties are exciting and exceptional: **MOISTURE**—Moisture vapor transmission is  $2\frac{1}{2}$  to 5 times lower than that of polyethylene. **ODORS**—Resistance to

transmission of common gases 1000-2000 times greater than polyethylene. **CHEMICALS**—Almost complete non-reactivity to concentrated acids, solvents, alkalies and other corrosive materials. Completely resistant to grease and oil. Fire retardancy is excellent.

RESYN 3600 can be coated on paper, paperboard, plastic and other substrates. It also may be applied to fibers. It is of interest to a broad range of industries, including food and other types of packaging, converting, chemical, and textile. Call or write your nearest National office for full information.

**National RESINS** NATIONAL STARCH and CHEMICAL CORPORATION

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And All Principal Cities in the United States, Canada, England and Mexico

## Alberta newsprint mill gets "go-ahead"

EDMONTON, ALBERTA—Construction of a \$35,000,000 newsprint mill at Whitecourt, 100 miles northwest of here, will be started this summer, and production is expected in late 1963.

The mill, to be owned and operated by Alberta West Forest Products, Ltd., will have a rated capacity of 300 tons.

The company has acquired a lease on 3,000 square miles of forest near Whitecourt, and plans are under way for development of access roads and transportation facilities.

An early start on this project was indicated by Alberta's minister of industry and development, Hon. A. Russell Patrick, in a statement to PULP & PAPER. He said that he expected the Alberta West Forest Products project to get under way this year,

although other reported pulp and paper enterprises might take a little longer to materialize.

Official announcement of the decision to go ahead with the mill's construction was made by Lands and Forests Minister Norman A. Willmore.

The Whitecourt mill will be the only newsprint operation in Canada between the British Columbia coast and Abitibi Power & Paper Co.'s Pine Falls, Man., subsidiary, Manitoba Paper Co.

**One of best prospective areas** for a pulp mill in the West is offered by the Prince George area of British Columbia, according to J. H. Frey, forester of Shelly Sawmills, Ltd., at Prince George. He summarized his reasons for this conviction when he

addressed the Natural Resources Conference in Victoria, B.C., recently:

(1) Positive forces are working for a pulp mill, including the provincial government and the local Industrial Development Commission. (2) Extensive forest resources. (3) The saw-mill economy of the area will retrench in some locations and become a satellite in others. (4) Gradual inclusion of trained technicians in the ranks of existing management that will inject a more progressive approach to the use of wood. (5) A subtle shift of control from those ostensibly holding the timber on the stump to the technologist-sales force-financier group, if for no other reason than the fact that a tree can be worked up to many times its value on the stump by a crack management team. ■

## Brown Co. to make sanitary tissues

BERLIN, N. H.—In a move to strengthen its market position, Brown Co.'s President Leonard A. Pierce announces a major decision to manufacture its own sanitary tissue. Brown Co. now makes towels, has offered tissues for several years, but manufacture has been on a contract basis.

Now, Brown will install a new 101-in. paper machine plus stock preparation and finishing equipment for sani-

tary tissue. Relocation of paper mill supplies and spare equipment into a new mill addition and changes in towel manufacturing storage and shipping facilities are also planned.

Manufacture of tissue will be under Conrad T. Waldie, Jr., vice president and gen. mgr. of the towel division.

The decision to manufacture its own tissues, explains a company spokesman, was made after a careful

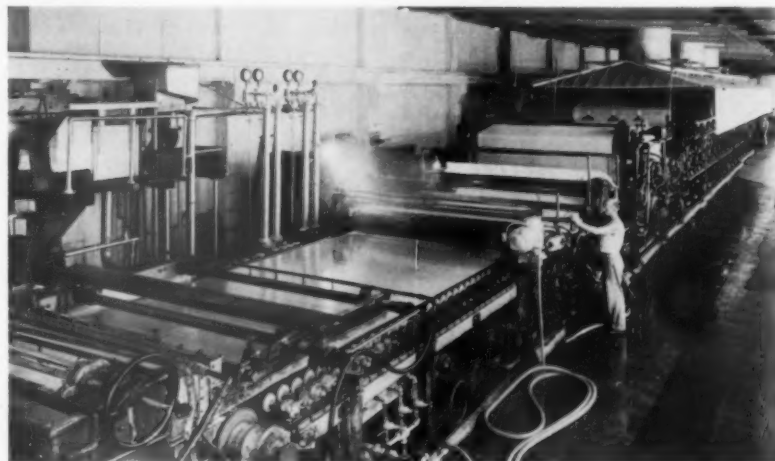
analysis of present and predicted future demand for the company's industrial paper products. "In our judgment," explains President Pierce, "customers want and insist on a complete line of paper products from the manufacturer. By offering them both towels and tissues made in our own mill, we will definitely strengthen our market position and insure continued growth of this line of our products." ■

## Strathmore to rebuild No. 6 machine

WEST SPRINGFIELD, MASS. Strathmore Paper Co.'s No. 6 machine is being redesigned to make paper at a top speed of 750 fpm. This machine, one of three at Woronoco mill, makes bond, blueprint, tracing, diazo or white print, photographic base papers.

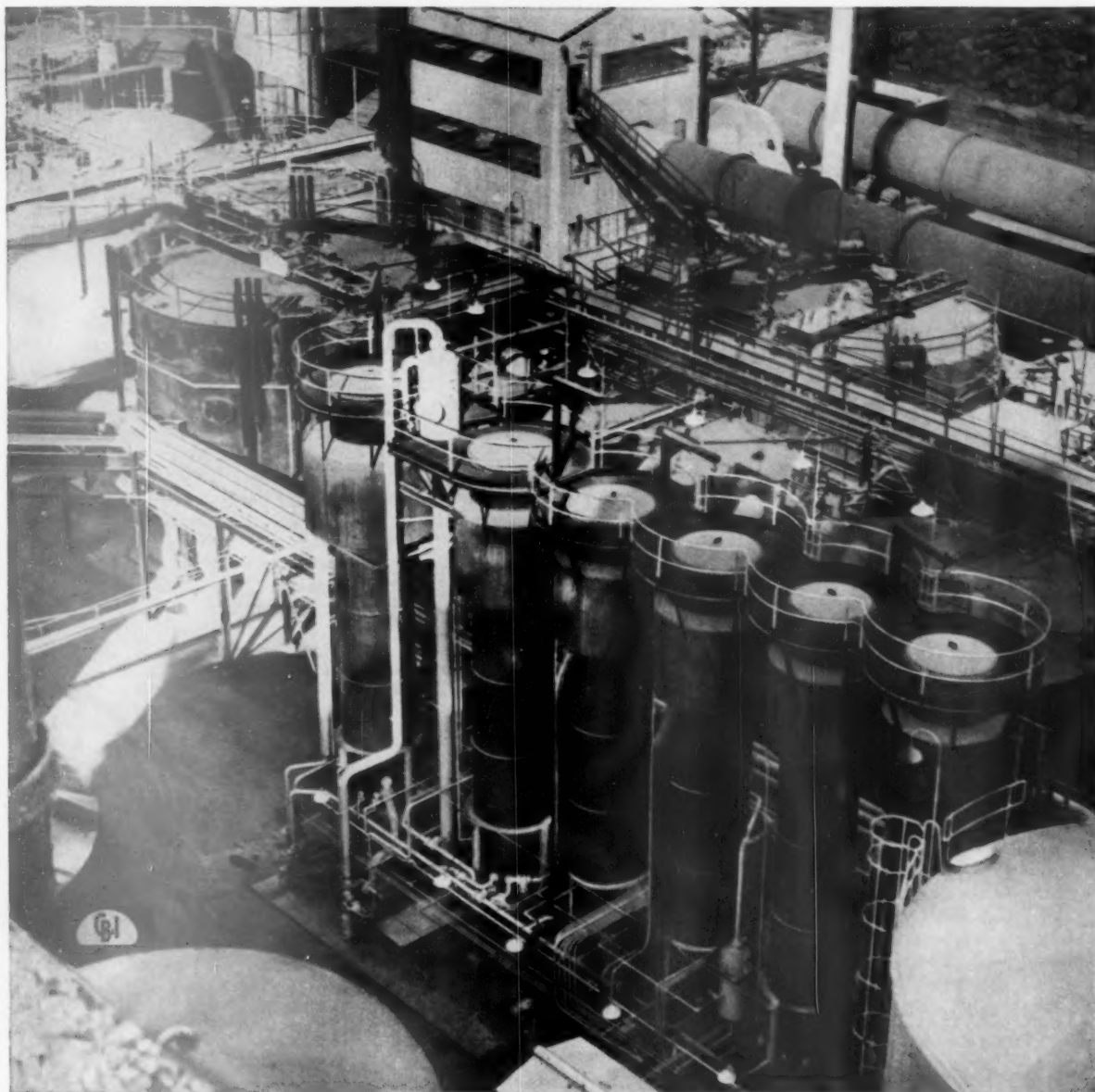
Manchester Machine Co. has the rebuilding contract. Equipment is expected to be available by mid-August and Strathmore officials plan to complete the installation within six weeks working around-the-clock. Wire length of the machine will be increased from 50 to 75 ft.

Strathmore recently completed its new power plant for the Woronoco mill built to handle increased capacity of the rebuilt machine. The company has spent some \$2,500,000 on these Woronoco changes; about \$10,000,000 since 1953 on plant modernization at its four mills. ■



**LONGER WIRE**, new size press and 13 new dryers are some changes being made to Strathmore Paper Co.'s No. 6 machine at its Woronoco mill near Springfield, Mass. Machine speed is being boosted from 500 fpm to 750.





CB-6111

## Recovers 99.9% of the Processing Chemicals ...but that's only part of the story

Recovering more than 99.9% of the process chemicals and collecting waste heat, with low-pressure exhaust steam, are the remarkable, highly efficient accomplishments of this CB&I-designed sextuple effect evaporator.

Installed at Fibreboard Paper Products, Antioch, Calif., the evaporator bodies were fabricated with support legs attached, for fast erection outdoors. Corrosion in critical

areas is kept under control by stainless steel tubes and stainless Hortonclad® shells, heads and tubesheets.

The highly efficient design includes CB&I patented integral preheaters. They reduce steam requirements and improve evaporator capacity. Some 380,000 gals. of water daily can be boiled off from the liquor, using only 1 lb. of steam for each 5 lbs. of water evaporated. Patented entrainment separators re-

cover all but a minute quantity of the processing chemicals.

To get full details today, write Chicago Bridge & Iron Co., 332 South Michigan Ave., Chicago 4, Ill. Offices and subsidiaries throughout the world.

CB&I



## IP readies two corrugating plants

NEW YORK—International Paper Co. will begin manufacturing in July of corrugated shipping containers at a new plant near Larimore, Missouri and in October, expects to start up another new corrugating shipping containers plant at Northlake, Ill.

The Northlake plant with its 260,000 sq. ft. of manufacturing space, will be the largest IP operation of its type, says Arthur B. Damon, division general mgr.

The Larimore plant will cover 85,000 sq. ft. and will service compa-

nies in the north area of St. Louis and the rapidly expanding industries in Missouri and Illinois. The Northlake plant will serve the Chicago area and augments the present container division's facilities in the same city, but more than doubles existing facilities. ■

## Next move is up to Georgia-Pacific

JUNEAU—That's the news from Washington regarding whether Georgia-Pacific Corp. will or will not get 7.5 million bd. ft. of Alaskan timber. Under terms of the preliminary award still in effect, the company has until July 1 to qualify for this large amount of Tongass National Forest timber. A prime qualifying factor concerns submitting plans by that date for a pulp mill to be built in the Juneau area.

Final award would obligate Georgia-Pacific to build the mill within a period of three years.

Further time extensions are unlikely to be granted by the U.S. Dept. of Agriculture on the preliminary contract which it made with G-P in 1955. The original qualification deadline was July, 1958 but a 3-year extension was granted.

Members of the Alaska House of

Representatives introduced a motion last year urging the state's congressional delegation to oppose further extension of the planning period granted G-P under terms of this timber acquisition.

What does the company say about the timber and the mill? "Market possibilities cast doubt on the economic feasibility of our making this commitment." ■

## More mills discussed for California

SAN FRANCISCO—Three more paper companies are moving toward announcement of new mills in the California market, fastest growing in the U.S.A. Two of them have mills now in quality paper fields in the Middle West and East, and this would "blanket" the major national market centers with their California mills. Another company has already picked a new name for its California mill. This latter firm is one of the biggest in the nation. With their various affiliations, the other two are big organizations, too. These three do not include the already announced California mills for Kimberly-Clark and Georgia-Pacific.

**Consolidated Water Power & Paper Co.** reports that expenditures for new and improved plant facilities totaled \$6,392,371 in 1960. Major items were an enamel paper expansion program under construction at Wisconsin River Div., installation of a new plastic laminating press at Consoweld Corp., enamel paper machine modifications and a new coating preparation plant for the Wisconsin Rapids mill.

**Publishers' Paper Co.**, Oregon City, Ore., extends its industrial scope and effectively increases its pulpwood supply by purchasing Buehner Lumber Co. The acquired mill, at Tillamook near Publishers' timber lands, will enable the company to better integrate

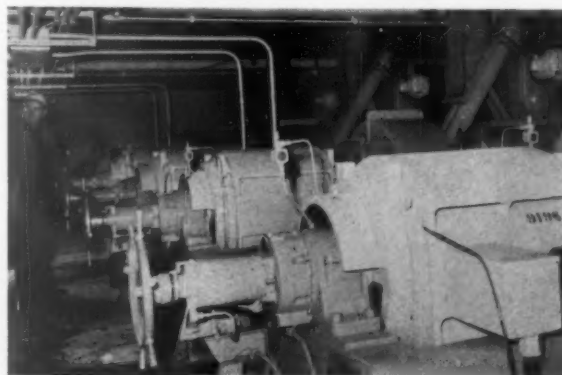
its operations. Higher grades of logs can now be processed in the company's sawmill rather than diverting into open market. A barker and chipper will be installed at the 120 M bd. ft./day sawmill to convert residue wood into clean chips for the pulp mill.

**MacMillan, Bloedel & Powell River Ltd.** has expanded its high yield sulfite pulp system at Powell River, B.C. When up to intended 350 tpd capacity, this will be one of the largest high yield sulfite mills in North America. System was expanded to 8 Bauer refiners; 4 primaries, 4 secondaries; 300 No. 606 Centri-Cleaners and a Cowan screen followed by a Bauer 410 refiner for rejects. Production involves less, but harder, cooking in

existing digesters. Resultant high yield stock is substituted for regular sulfite in newsprint.

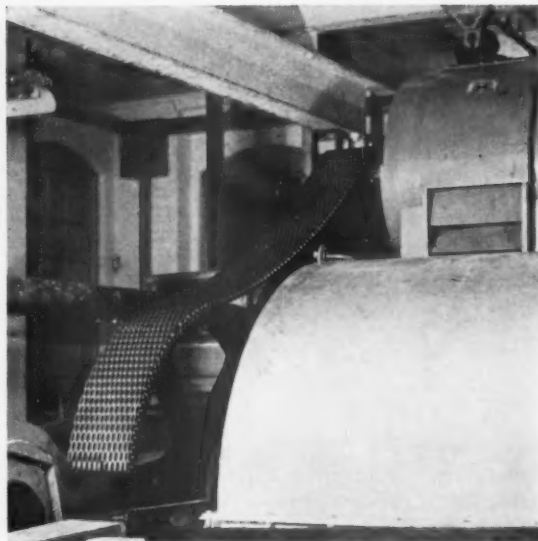
**Diamond National Corp.** plans to build a new molded-pulp plant in Middletown, Ohio. The \$6,000,000 plant will be in production by mid-1962.

**Crown Zellerbach's** Port Townsend, Wash. mill has modernized its washing and screening operations. Results: more efficient washing, reduced effluent and virtual elimination of chemical losses. Just-completed project included replacing existing washers with three large drum type Impco washers, 11½ ft. dia., by 18-ft., processing pulp for No. 2 machine. ■

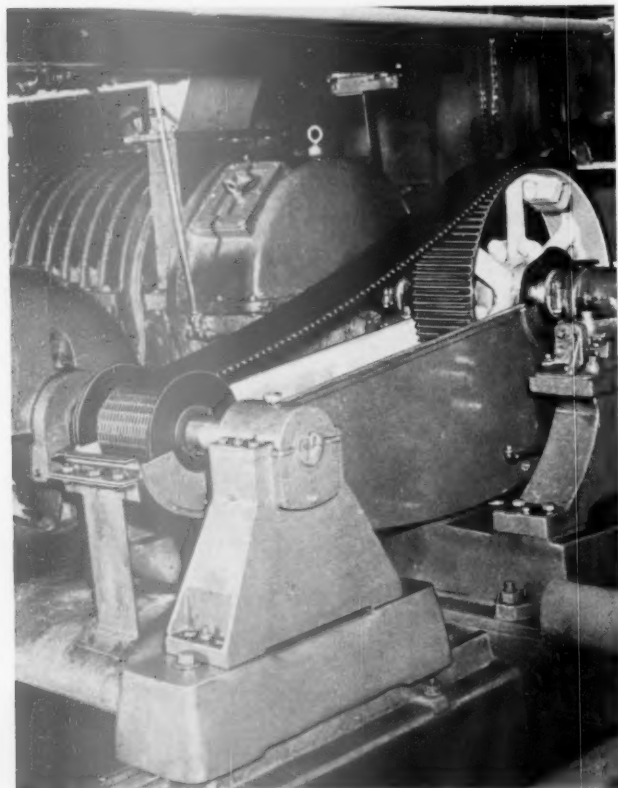


SECONDARY REFINERS in high sulfite system at MB&PR.

WHERE MINIMUM MAINTENANCE AND MAXIMUM DEPENDABILITY are required of a drive, Link-Belt silent chain drives are unexcelled for light or heavy load applications. Slipless transmission of power to this pulp beater results in a high quality pulp of uniform consistency and in less time than with other types of drives.



# Link-Belt silent chain for drives that can't afford to slip



## Smooth, positive engagement assures full power transmission

Continuous, nonslip operation for many years with only routine attention—this is a common experience with Link-Belt silent chain. Where other types of drives are impractical due to slipping tendencies, this modern chain drive delivers positive transmission of full-rated horsepower.

Link-Belt silent chain assures efficiency for either large or fractional-horsepower drives. Easy assembly in tight spaces permits built-in drives, compact housings. Close grouping of equipment saves valuable floor space. High humidity, temperature have no effect on performance. Ratios as high as 10-to-1 are accommodated on relatively short centers.

Available in a full range of sizes. For complete information, call your nearby Link-Belt office or authorized stock-carrying distributor. Ask for Book 2425.

**WHERE SPACE IS LIMITED**, compact Link-Belt silent chain drives permit close grouping of equipment. High ratio reductions are easily accommodated on relatively short centers.

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# Kennedy's forest aid goals

reveal emphasis on incentives and marketing for small owners

Exclusive report by ALBERT W. WILSON, Editor, PULP & PAPER

WASHINGTON—An official spokesman for the White House-Department of Agriculture collaborators in President Kennedy's recent American Agriculture Message reveals that President Kennedy and Secretary Freeman are agreed to launch the government into "worthwhile incentive costsharing programs" with small woodlot owners.

"Assistance in marketing" will be a part of the administration program. The Kennedy-Freeman spokesman told PULP & PAPER that the administration has not yet decided what legislation will be necessary to establish forest industry cooperatives.

These main points came out of an inquiry by the writer through qualified sources speaking for both Mr. Kennedy and Secretary Freeman, especially on possible government moves to subsidize small forest owners, involving marketing and parities—as in other agricultural fields.

The spokesman did say the government will rely on state-employed foresters, rather than federal, to carry out the cooperative program, and that more will be needed. However, the government shares the cost and since it is putting up the money, presumably it will require some additional federal controls.

Here are the questions and the answers from the authorized Kennedy-Freeman spokesman:

**QUESTION:** *The President's Message on American Agriculture mentions tree planting funds for restocking of 50 million acres of forests and to increase the forest stands on 100 million acres. Is this for government forests, state forests, industry forests or small private forests? Or for all or any of these?*

**ANSWER:** These figures relate to the farm and other small private owner-

ships. The 50 million acres is the area that is now, or will, between now and 1970, need to be reforested in order to make them productive again. Otherwise they are not likely to be reforested. The 100 million acres is the area now needing timber stand improvement plus new needs that develop between now and 1970.

**QUESTION:** *The President calls for setting up cooperatives among forest owners. How would these cooperatives be administered? How far will the federal government go in participating in these cooperatives? What would be the role of the state in carrying out such programs? Would the U.S. Forest Service require expanded personnel? Or would the State Forest services require expanded personnel? Or both?*

**ANSWER:** With respect to forest cooperatives, we are not as yet able to indicate what new legislation or other action may be needed.

**QUESTION:** *How is it contemplated that the government would go about getting qualified people for technical assistance to forest owners and especially to small woodlot owners?*

**ANSWER:** The states now have about 550 qualified foresters providing technical assistance to forest owners. These are state employees. This work is carried out under the Cooperative Forest Management Act of August 25, 1950, wherein the federal government shares the cost with the states. It is contemplated that the state foresters will employ qualified people to accelerate the CFM work in the same manner as they have in the past, by recruitment of professional foresters. No difficulty is expected.

**QUESTION:** *In his natural resources message, The President indicated he was in favor of "multiple use" of for-*

*est lands. Does this apply to all National Forests? Could it apply to the new reserved "Wilderness Areas" (Anderson Bill) as a means of simple good housekeeping in old forests—cleaning up dying trees, etc?*

**ANSWER:** The principle of management for multiple use applies to all National Forests. The Act of June 12, 1960, directs that the renewable resources of the federally owned National Forests shall be managed for sustained yield and multiple use. At the same time Section 2 of the Act recognizes that establishment and maintenance of the areas of wilderness are consistent with the provisions of the Act. The Anderson Bill would make no provision for harvest cutting but would allow measures to be taken in control of fire, insects and diseases.

**QUESTION:** *The pulp and paper industry and other industries in the forest field are proud of their own records in reforesting and the aid they have given to small woodlot owners in many ways and some of the leaders in our forest industries are concerned that the government may get into subsidizing of forest owners and into marketing, which would involve parities, etc. What is the Kennedy-Freeman view on this?*

**ANSWER:** As stated in point 5 under the Forest Resources portion of the President's Farm Message, the Kennedy-Freeman view is that the worthwhile incentive cost-sharing programs under the Agricultural Conservation Program for tree planting, timber stand improvement and other forest practices should be additionally emphasized. Assistance in marketing will be a part of the Cooperative Forest Management Program and in connection with forest cooperatives mentioned above.

## Confusion arises over Wilderness Bill

Meanwhile, in Washington, the new highly controversial 1961 "Wilderness Conservation" bill of Senator Anderson (D., N. Mex.) was still in committee after the Easter holidays. It might reach the Senate floor by the

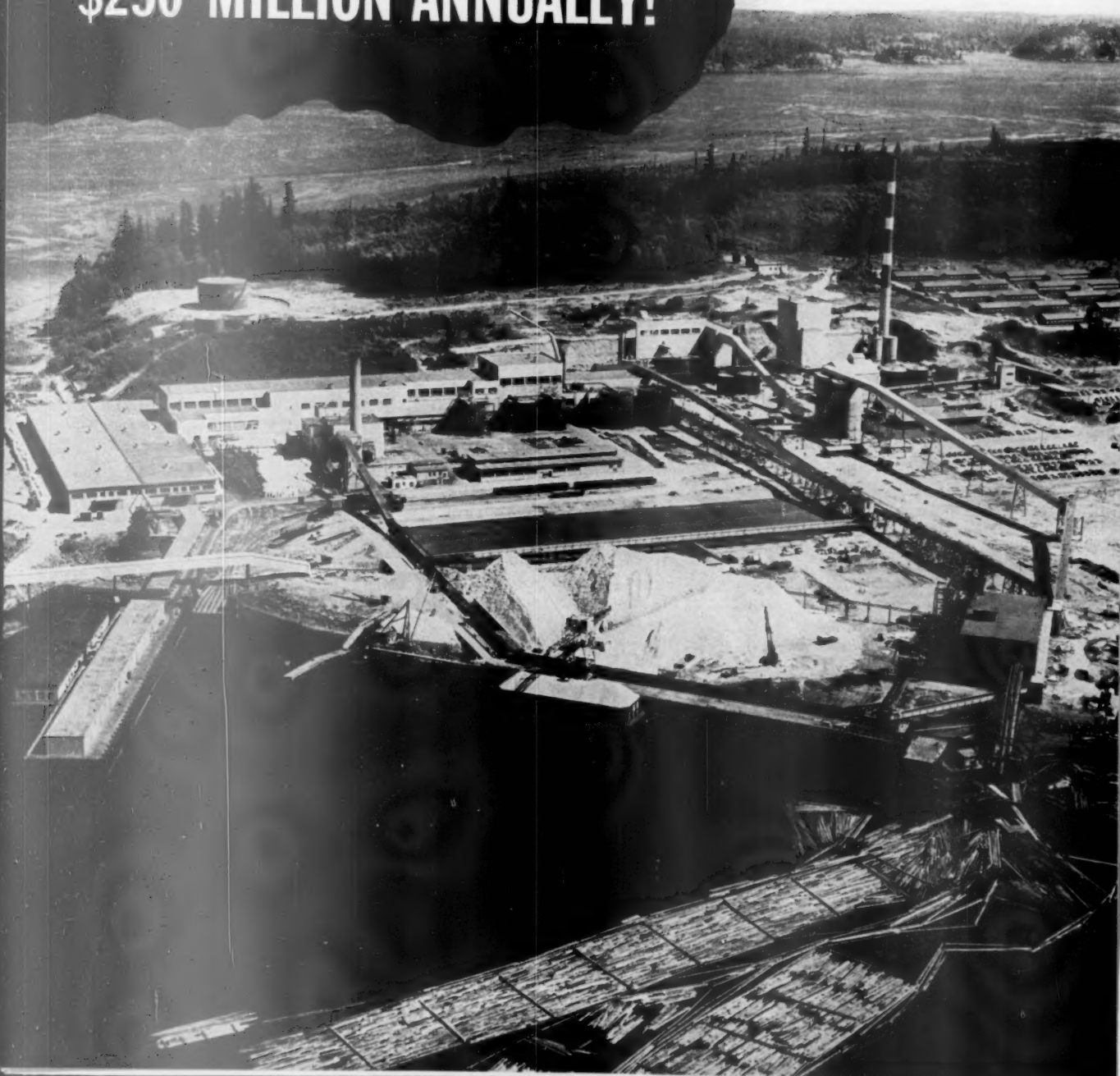
time this issue reaches readers but other administration-favored measures were apparently gaining precedence.

While the new bill is more moderate than those introduced in previous Congresses, it still proposes plac-

ing vast wild and primitive areas into the protection system despite the strong position of opposition Senators that many areas should be given further consideration by Congress before being irrevocable. . . . turn to p. 15



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PULP & PAPER INDUSTRY  
\$250 MILLION ANNUALLY!**





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Today, more and more pulp and paper plant maintenance engineers are turning to the *complete* PITT CHEM System of protective coatings to reduce this loss effectively and economically. Service-proven PITT CHEM coatings are saving thousands of dollars every day, protecting expensive processing and manufacturing equipment against moisture and virtually every chemical corrosion condition which exists in pulp and paper plants.

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Tarset, the original, patented coal tar-epoxy coating, is now solving some of the severest corrosion problems encountered in the pulp and paper industry. This revolutionary cold-applied coating is ideal for the protection of tanks, pipelines, slurry tanks and waste systems handling acids and alkalis.

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PITT CHEM Tarset, Tarmastic and Insul-Mastic are tough, *thick film* coatings that outlast conventional maintenance paints 10 to 20 times. You measure their protection in *decades*, not years. They can be cold-applied by brush, spray gun or roller. No other family of protective coatings can solve so many of your corrosion problems so *economically*.

For your personal corrosion data file complete the coupon below and return it today. Then consult your nearest PITT CHEM Distributor—he's listed in the "Yellow Pages." He'll be glad to discuss your corrosion problems with you, and work out a corrosion protection program to meet *your* requirements, without obligation.

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PITT CHEM Tarmastic coal tar coatings are a series of coatings designed to solve a wide variety of corrosive conditions at moderate cost. They are ideal for the protection of structural steel, fan housings, cooling towers, air ducts and concrete, stone or masonry foundations.

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### PULP & PAPER CORROSION DATA FILE

Includes a survey of corrosion problems in the Pulp & Paper Industry, data on PITT CHEM Coating Systems and a coating selector guide. Protective Coatings Division, Pittsburgh Chemical Co., Grant Bldg., Pittsburgh, Pa.

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Company \_\_\_\_\_  
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Since Powell pioneered the application of special alloys in valve design, you can today find industry's widest choice of valve materials for any problem of heat, temperature—corrosion or erosion caused by pulp and paper chemicals, liquors, bleaches and caustic compounds.

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Learn how this Powell valve performance can pay off in your pulp and paper operations by contacting your nearby Powell Valve distributor or write The Wm. Powell Company, Cincinnati 22, Ohio.

150-pound W.P. Quick Opening Gate Valve. Bolted flanged bonnet, solid wedge, integral seat. Sliding stem can be locked in any desired position. Sizes, 2½" through 6"; with screwed ends, 2½" through 4".



150-pound Bronze Swing Check Valve. Bolted flanged Cap. Disc has sufficient lift to clear line of flow. Sizes, 2" through 8". Screwed end valves available in sizes 2" through 3".

200-pound W.O.G. Gate Valve. Body, bonnet, yoke, gland are Ni-resist. Solid wedges are Ni-resist with 316 stainless steel facing. Other trim parts are 316 stainless steel. Sizes, one-piece yoke, 4"; two-piece yoke, 5" through 12".



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**POWELL PAPER MILL VALVES**

THE WM. POWELL COMPANY CINCINNATI 22, OHIO



starts on p. 11 . . . cably locked up.

In the March 20 issue of PULP & PAPER, it was reported that the potential areas had been revised downward from 55 to 32 million acres. This was based on a reliable report that Senator Anderson himself, when questioned about the larger figure, was heard to say: "Where do you get the 55 million figure? It is only 32 million."

But there is still much confusion over the figure and apparently only the Forest Service areas have been actually settled.

In a letter to PULP & PAPER, Howard A. Post, forest resources assistant, Natural Resources Dept., Chamber of Commerce of the United States, contends there is no indication the acreage is being scaled down. His letter:

"Dear Mr. Wilson: Unfortunately, the February Senate hearing on the Wilderness bill (S. 174) did not clarify the acreage question; in fact, my impression was that Senator Anderson

purposely confused the issue and never sought an official acreage accounting from proponents of the bill.

"Actually, there was no indication that acreages sought have been scaled down. Just the opposite can be demonstrated.

"On both the 1957 and 1958 hearings, areas proposed for inclusion in a wilderness system were specifically listed by name and acreage. These included:

National Forest Areas	14,395,971
National Park Areas	22,073,504
National Wildlife Refuges and Game Ranges	13,753,860
	50,223,335

"But, in addition, in 1960 alone there were 11 million acres of federal lands withdrawn for game ranges and refuges in Alaska—not included in above total—plus a small additional acreage of national forest lands withdrawn in the East. This, then, gives a

potential of at least 61 million acres, which could qualify under the definitions of S. 174.

"Frankly, we do not believe that the proponents of the legislation have changed their sights. Since 1958 they have no longer been willing to be specific about areas. This is purely strategy in my opinion.

"I thought you would like to have the factual data which is a matter of record. I emphasize again that there were no indications of acreage compromise during the hearings."

The American Pulpwood Association and other forest industry groups are standing firmly against the Anderson bill on the ground that it will sequester vast forest areas for only single use purposes. But there seems to be enough strength among grazing industry lobbyists to insure them of special rights in some of these forest areas to be shut off from even such forest improvement cutting as is permitted in National Forests. ■

## Further upturn ahead for paper stocks

"PERHAPS we are a voice in the wilderness, but we have chosen to set forth a premise of optimism," Newton Terzian, Industrial Department, Moody's Investors Service, told PULP & PAPER in commenting on the opinion survey among a number of brokers reported in the March 20 issue (page 5).

A recent *Value Line Investment Survey* contended that paper stocks are out of favor with institutional and individual investors for "failure to translate prices into earnings per share." PULP & PAPER questioned other brokers who appeared generally to share similar views, particularly that for short term turnover, paper stocks were not popular. But all emphasized that they did not foresee selling.

"Rather than to adopt a hopeless viewpoint based on the industry's disappointing record of recent years, we think the paper industry will snap

back, as it has in every business setback," said Mr. Terzian.

"By that time paper stocks are likely to come back 'into favor', but our guess is that it will also be too late to buy them."

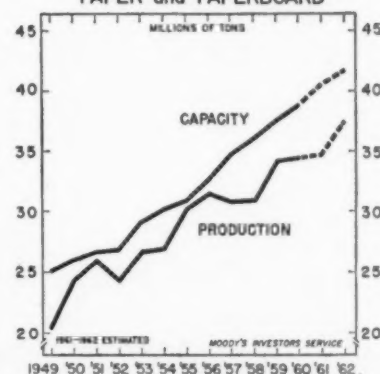
**An uptrend by the year end** was forecast in a recent issue of *Moody's Stock Survey*. It went on:

"This should bring an important further market improvement for paper stocks. Paper issues already have begun to recover from a sharp decline which carried through last fall. For a group of paper stocks, there was an average drop in price of about 40% from highs in late 1959 or early 1960. Since then, however, about a third of this loss has been made up, along with the general rise in the market.

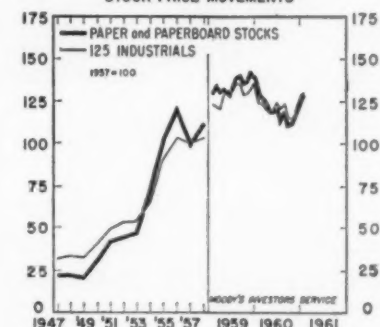
"Statistically, the present average yield of 3.5% on paper stocks, and prices that are about 17 times 1960 earnings, do not represent cut-rate evaluations. Nevertheless, we expect selected paper equities to rise well over the next year or so."

Moody's named some paper companies prominent in consumer markets as having "strongest growth appeal," but it also recommended some "soundly integrated operations with

PRODUCTION VS. CAPACITY  
PAPER and PAPERBOARD



PAPER AND PAPERBOARD  
STOCK PRICE MOVEMENTS



Moody's Projections for  
U.S. Paper & Paperboard

	Output (millions of tons)	Capacity (millions of tons)	Operating Ratio
1959 ..	34.0	37.5	91%
1960 ..	34.3	38.8	88
Est. 1961 ..	34.7	40.5	86
Est. 1962 ..	37.5	41.7	90



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paper...  
like  
detroit  
builds  
cars?

A lot of mills are doing it. Right now. With mechanization. They're streamlining material flow. Using air-film tables, for instance . . . conveyors, lifts and Seybold Full Hydraulic 65", 85" and 100" mill trim-

mers—the only full hydraulics. They're cutting costs—boosting tonnage. The figures are fantastic. So much so, you'll never believe them if we quote them. So join us on a plant tour . . . write today.



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competitive strength." Other stocks in printing paper, and packaging fields were cited as "attractively priced."

**Problems of the paper industry** have been similar to those of many other industries, says Moody's, but it adds on "the plus side" that its products are essential, with demand

closely correlated to relatively stable output of non-durable goods. Paper consumption has gained an average of 3.5% annually for ten years. Moody's said the paper industry knows there may be only a slight gain this year, but "it must build plans to care for future demand" and capacity will out-run production through 1962.

It said scheduled capacity increases in 1959-61 are 8%, against an expected scant rise of 2 to 3% in output. Moody's projected a 10% rise in production above current levels in 1962, to about 37,500,000 tons, and noted this was only about equal to 1959 capacity, pointing up "the need to expand."

## Expansion mood coming by September

NEW YORK—The economy will move mostly sideways during the first half of 1961, production may be stagnant for another month or two—but by September, business will again be in an expanding phase. Why? Because of a resumption of inventory accumulation; construction industry gains; growth of consumer disposable income; revitalization of consumer confidence; record-high personal consumption expenditures, increased government outlays.

These are the opinions of C. Stewart Baeder, a partner in the management advisory firm of MacKay-Schields Assoc., made during the NPTA convention at a breakfast meeting sponsored by New York and Pennsylvania Co.

"It is now clear that the new major turn in business will be upward; that the upturn will be statistically traceable from the second quarter of 1961;

that 12 months from now the FRB index will total between 112 and 116% of the 1957 base," said Mr. Baeder.

**Highest operating revenues** were reported by Time Inc. in its annual report for 1960. Circulation growth for all its magazines was "outstanding."

Net advertising revenue totalled a record \$187,000,000 in Time Inc. magazines, up 7% from 1959. Life led all magazines in advertising revenue for the 18th consecutive year, up 3%.

East Texas Pulp and Paper, Time Inc. subsidiary, maintained its unbroken record of capacity operation in 1960, operating 361 days. Output reached a new high of 146,900 tons of pulp and paperboard, up from 142,300 tons in 1959. East Texas, together with Time Inc.'s wholly

owned subsidiary, the Jasper Timber Co., holds some 625,000 acres of timberland, an area comprising almost 1,000 square miles. In the past four years, 75 million seedlings have been planted on 75,000 acres to insure continued timber yields.

**Records were broken in 1960** as British Columbia pulp and paper mills produced more than ever. Paper output totalled 1,089,156 tons, or 43,322 tons higher than in 1959. A total of 955,285 tons of pulp were processed into paper and an additional 1,090,000 tons of pulp were exported, 222,000 tons more than in 1959. Total value of B.C. pulp-paper production last year was \$242,925,000, representing 33% of the province's entire output of forest products and \$8,400,000 more than the 1959 total. ■

## ... INTERNATIONAL

### Russia at least 10 years behind U.S.A.

NEW YORK—Soviet Russia and neighboring Communist nations have imported millions of dollars of paper-making and pulpmaking machinery from Britain, Finland, Sweden, Germany and Austria and are pushing hard to catch up with the West in paper and pulp. Albert W. Wilson, editor of PULP & PAPER and editorial director of PULP & PAPER INTERNATIONAL, told an overflow audience at a recent evening meeting of the Metropolitan District TAPPI. There were 66 members and guests in attendance, some coming from Pennsylvania and New Jersey points.

"The Communist countries think nothing of ordering two or three big machines at one crack from a manufacturer, but it still will take them a long time to overtake the big lead in the West" said Mr. Wilson. He described visits to paper mills, both in Poland and in Russia, and his discus-

sions of their problems with the industry commissars and production and technical directors.

Despite the pressures in Russia for building new mills, introducing new techniques and processes and utilizing the vast reed resources of the Southern delta regions as well as forests in the Ural Mountains, in recent years it has not shown as great gains as U.S.A., Canada, Sweden, Finland or Japan, individually, in pulp, or U.S.A., Canada, Japan or West Germany, individually, in paper.

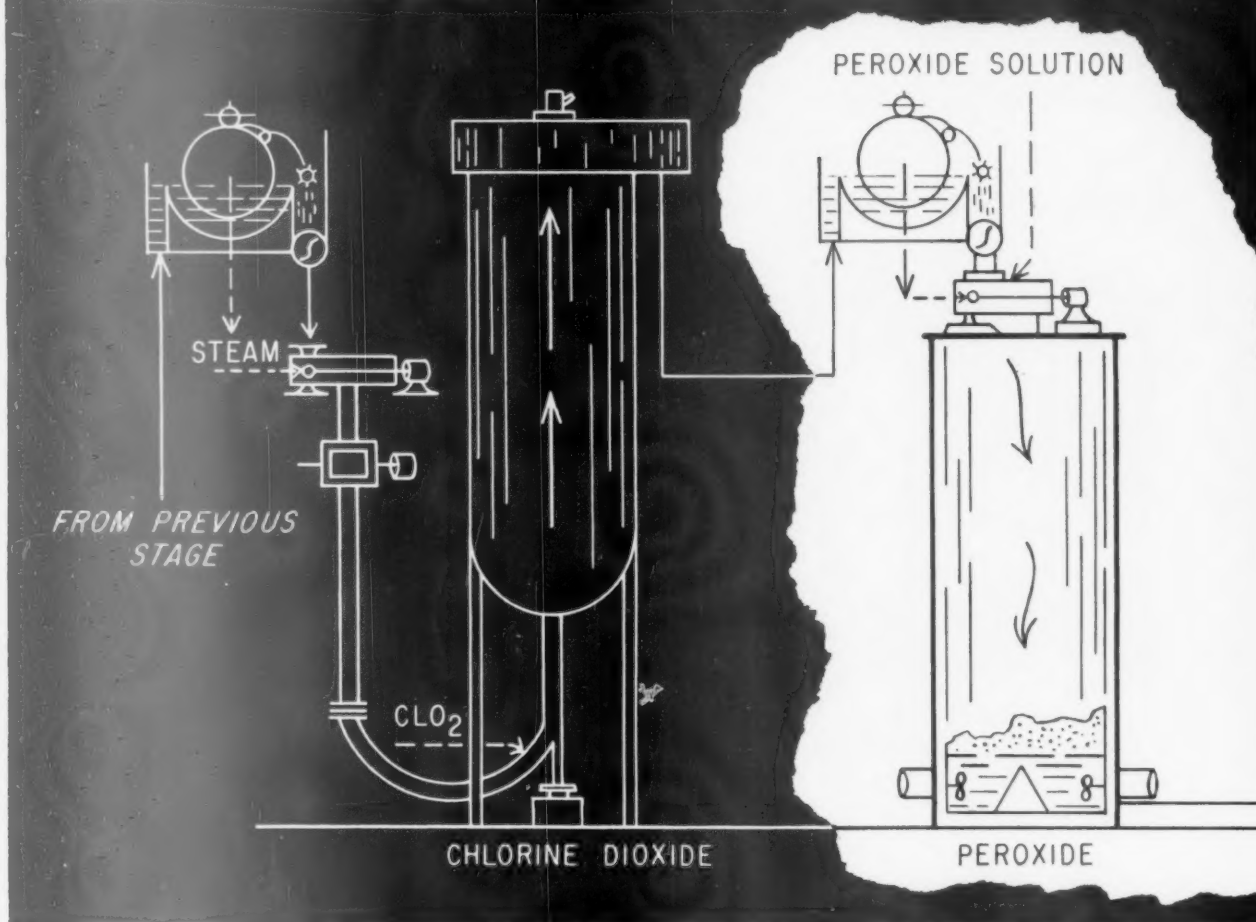
**"It will take at least ten years** for Russia to catch the United States in paper or pulp, if it ever does. It now makes less than 4,000,000 tons of woodpulp and less than 4,000,000 tons of paper," said Mr. Wilson. "It may overtake Sweden or Finland, individually, in pulp, or Japan, Britain, or West Germany, in paper, in near

future years, but Russia is four times as large in population than even the largest of these countries. It has about the same per capita consumption of paper as Mexico."

Even though Russia has exported small quantities of pulp, which European countries value as filler because of lower quality, the Russians, because of centralized control of exports, could at times upset pulp markets in certain localities.

Of other countries, Mr. Wilson said: The French are conservative but characteristically suited to do good technical work; the Germans are most aggressive and so far emphasize production needs over quality; British specialty papers are among the world's best; Finland rivals America in mass production techniques; Sweden is tops in pulp work; Poland is very poor as a nation but is making huge paper mill investments. ■

## Blueprint for Better Bleaching ... from Du Pont



Peroxide may be used as a replacement for caustic soda between two chlorine dioxide stages (as shown above)

## How you can use Du Pont Peroxides

With today's market trend demanding higher and higher brightness for kraft pulp, here are two ideas from Du Pont that might prove well worth your thorough investigation.

1. The use of hydrogen peroxide in the extraction step between the chlorine dioxide stages (as is shown above) can give you both premium
2. The use of hydrogen peroxide in the final stage following the chlorine dioxide treatment can result in brightness gains of 5-10 points

brightness and outstanding color stability. For example, regular 88 to 89 brightness pulp can usually be easily increased to 92 when 0.2% peroxide is used in place of caustic soda.

The use of hydrogen peroxide in the final stage following the chlorine dioxide treatment can result in brightness gains of 5-10 points

### CONTACT ONE OF THESE MEN FOR INFORMATION:

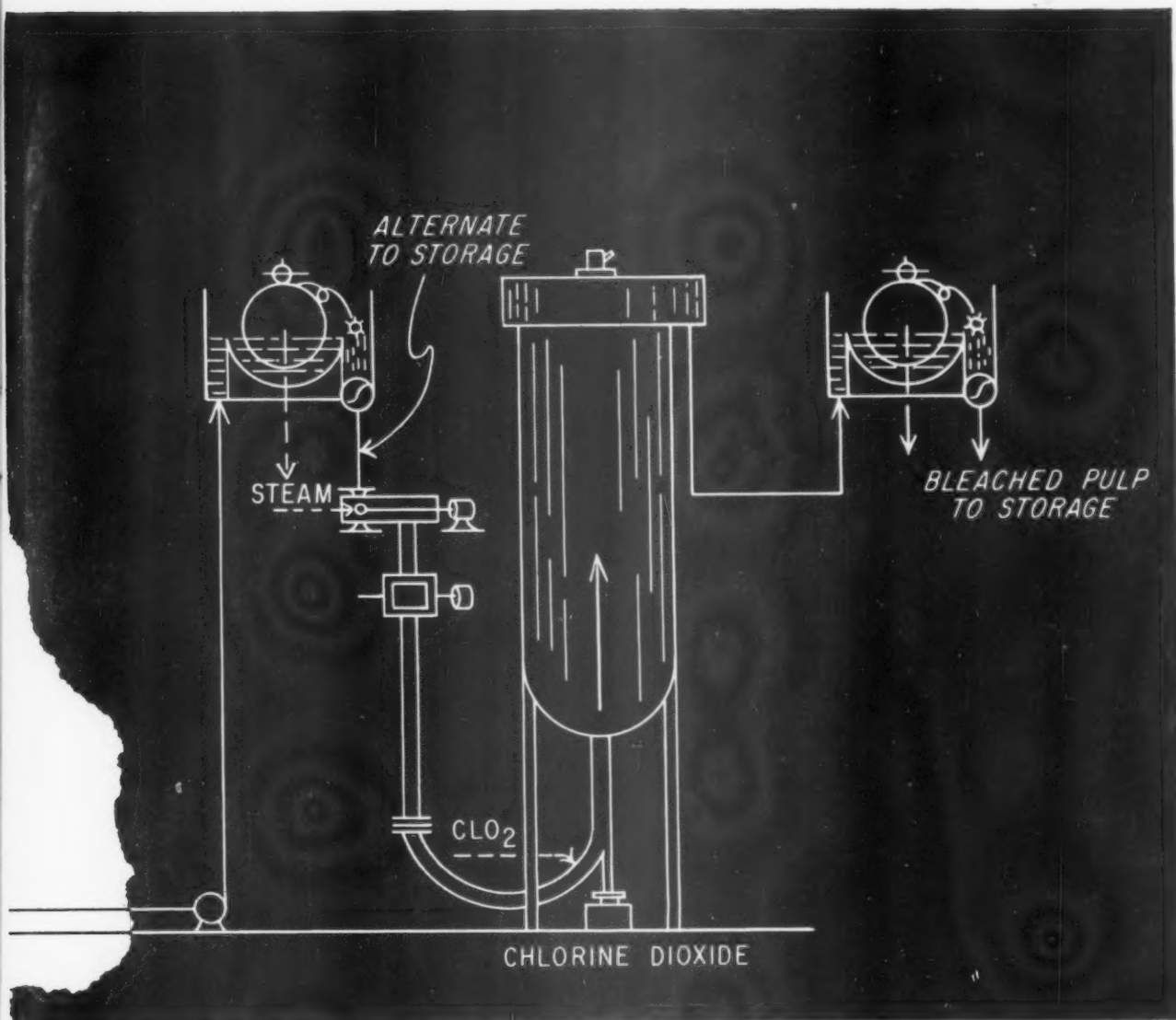
Or call: N. J. Stalter, Wilmington, Del.—PRospect 4-4698

#### Midwest Area

W. L. Liike, Chicago, Ill.—INdependence 3-7250

#### New York & Boston Area

C. R. Lombard, New York, N. Y.—LONgacre 3-6440



or as a final treatment after a chlorine dioxide treatment, to give you higher pulp brightness.

## to increase kraft pulp brightness

for the peroxide-treated pulps, after standard heat reversion tests.

Du Pont peroxides are easy to use and require only a minimum of handling equipment to introduce into your operation. Du Pont technical representatives will be glad to show you what peroxides can do for you and can suggest

process layouts (such as the one shown above) to fit into your present plant operation. Contact your nearest representative listed below, or write: Du Pont, Electrochemicals Department, Wilmington 98, Delaware.

### DU PONT PEROXIDES

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P. E. Kiefer, Portland, Oregon—CApital 7-1281

**Southern Area**  
R. W. Hammond, Charlotte, N. C.—FRanklin 5-5561

**ALBONE®**  
hydrogen peroxide



**SOLOZONE®**  
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**Another Mount Vernon Dryer  
Felt Success Story...**

A machine producing fine papers has repeatedly used a smooth-faced, all-cotton dryer felt recommended and supplied by Mount Vernon Mills. SIAMESE 135 has averaged over the years 360 to 400 days operating life, giving continual complete satisfaction. Where high absorbency and an exceptionally smooth face are required, SIAMESE 135 is a recognized leader.



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### **SIAMESE 135—All Cotton Duplex Dryer Felt**

SIAMESE 135 provides the answer to three problems simultaneously. Available in medium and heavy weights, this all cotton duplex dryer felt fills the need for a low-cost felt with maximum *porosity*, efficient *drying*, and an exceptionally *smooth surface*. SIAMESE 135 can, therefore, chalk up on the credit side... smooth finish, optimum drying, and savings! Ask for this dependable dryer

felt with these 3-way, built-in benefits. Available pre-stretched and pre-shrunk with clipper seams.

**MOUNT VERNON DRYER FELT FAMILY—SIAMESE 135** is just one of Mount Vernon's full "family" of scientifically designed dryer felts. There's an individual felt for virtually every paper machine position and every paper-making need.

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# ... INTERNATIONAL

## Consumption, production at high levels

MADRID—Consumption of pulp and paper in 1973 in Spain will rise between 200 and 250% over 1958 levels, according to José Luis Asenjo, editor for Spain of PULP & PAPER INTERNATIONAL. He quotes a current government report in outlining needs of Spain's rapidly expanding economy and comments, "To obtain these ends, it is necessary to increase at the same time foreign paper pulp imports from Nordic countries, U.S.A. and Canada."

STOCKHOLM—New production and delivery records were established by Sweden's paper industry during 1960, according to the Swedish Paper Mills Assn. Output was up 15% to 2.15 million tons, more than half being newsprint and kraft paper. Largest individual buyer was West Germany, which in 1960, took 24% of the export total.

HELSINKI—Enso-Gutzeit Oy, Finland's largest industrial company and the

largest paper products exporter in the world, has signed a licensing agreement with Clupak, Inc., New York, to manufacture Clupak extensible paper. The agreement calls for installation of the first Finnish extensible unit, to be built by Beloit Iron Works, at the Kotka kraft mill.

MELBOURNE—The southern hemisphere's first integrated tissue manufacturing and converting operation is now producing. It is the \$94-million plant of Bowater-Scott Australia Pro-

prietary Ltd. Technicians from the parent American and British companies supervised installation of the new plant and trained Australian staff.

NEW YORK—World shipments of chemical market pulp in 1960 showed an increase in all grades, according to figures released by the Assn. of Pulp Consumers. Tonnages shown are the combined sales, both internal and export, of the five major market pulp producers (USA, Canada, Sweden, Finland and Norway). ■

World Shipments of Chemical Market Pulp

Pulp grade	Thous. of tons		Increase in 1960		% of total	
	1960	1959	Thous. of tons	%	1960	1959
Bleached sulfite	2,102	1,849	253	13.7	27.5	26.9
Unbleached sulfite	1,323	1,237	86	7.0	17.3	18.0
Bleached sulfate	2,625	2,361	264	11.2	34.4	34.3
Unbleached sulfate	1,588	1,430	158	110.0	20.8	20.8
	7,637	6,876	761	11.1	100.0	100.0

Source: Assn. of Pulp Consumers, Inc.

## MEETINGS

### Adhesives for coating is conference theme

BUFFALO—More than 1,000 TAPPI members are expected here, May 8-10, for the 12th Coating Conference. This is the one chance that the industry has to assess on an annual basis the latest trends and developments. This year's theme is "Adhesives for Coating." But it's a safe bet that delegates will, as they do each year, take the pulse of the entire coating industry.

Uppermost in many minds will be these latest developments: The merits of gloss calendering vs. on-machine cast coating; operating reports on experiences with on-machine and off-machine blade coating; and new pigments and adhesives. There will be one additional problem to discuss this year: Where will excess coating capacity go?

General Conference Chairman R. W. Martinek, Kimberly-Clark Corp., will open the meeting. Moderating the first session will be J. T. Goodwin, Jr., Corn Industries Research Foundation, Inc. First session speakers will be: J. J. Bikerman, M.I.T., "Adhesion to Fibrous Materials"; T. Alfrey, Dow Chemical Co., "Some Theoretical Aspects of Adhesion"; M. R. Castagne, associate editor, PULP & PAPER, "Future Coating

Trends"; and F. Bergstein, Interstate Folding Box Co., "Pre-Cast Coating—a New Process and a New Products."

Art W. Neubauer, Crown Zellerbach Corp., will moderate the second session which, for the first time will include reports on European coating developments: "Some Techniques for the Assessment of Coated Art Papers," I. F. Hendry, Wiggins Teape Research & Development Ltd., Beaconsfield, Bucks, England; "Coating of Paper in Germany," M. Judt, Feldmühle Papier und Zellstogwerke Akg., Hillegossen, Germany; "Starch Requirements for Paper Coating," A. Harsveldt, Nationale Zetmeelindustrie N.V., Veenendam, Holland; and "Rheology Properties and Flow Modifiers for Trailing Blade Coatings," J. F. Hern, Nopco Chemical Co.

A panel symposium on the conference theme, "Adhesives for Coating," will be moderated by R. T. Trelfa, Perkins-Goodwin Co. and will include Dr. F. Frost, S. D. Warren Co., enamel papers; F. Kaulakis, Consolidated Water Power & Paper Co., publication papers; R. H. Mosher, Kimberly-Clark Corp., specialty papers; J. T. Loomer, Continental Can

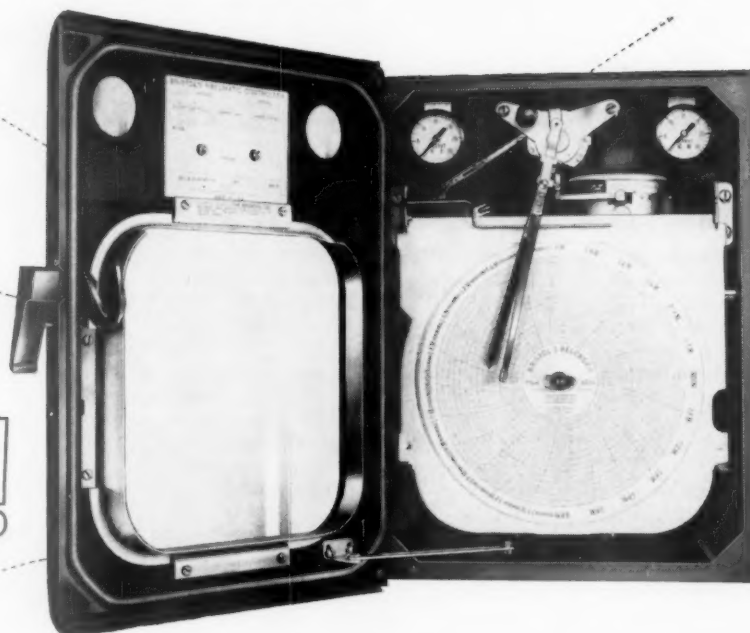
Co., board, and W. P. Taylor, The Champion Paper & Fibre Co., general comments on adhesive developments.

J. D. Wethern, Riegel Paper Co., will moderate a session including "The Evolution of Coating Preparation in a Bleached Board Mill," R. W. Bondurant and K. E. Bradway, Union Bag-Camp Corp.; "An On-Machine Double Coating Process," M. V. Merchant, Container Corp. of America.

The final session will be moderated by H. H. Lavery, International Paper Co., and will include "Cationic Latex with Controllable Penetration and Set-Off Properties," E. J. Heiser, A. S. Reder and R. W. Morgan, Dow Chemical Co.; "The Preparation of High Solid Casein Coatings," H. K. Salzburg, L. E. Georgevits and W. L. Marino, Borden Chemical Co.; "The Use of Polyvinyl Alcohol as a Coating Color Adhesive," C. P. Colgan and J. J. Latimer, Air Reduction Chemical & Carbide Co., and "A New Resin Emulsion for Preparation of Grease-proof Coatings," A. D. Jordan Jr., Rohm & Haas Co.

Guest speaker at the annual luncheon will be A. G. Sharp, senior vice president, Kimberly-Clark who will discuss "Opportunities Unlimited." ■

# NEW!



## Bristol Series 532 A/D\* pneumatic recording controller is outstandingly SIMPLE, RELIABLE, and STABLE

- Simple modular design for ease of servicing
- High control stability for closer process control
- Designed for batch-type and continuous processes
- Proportional, proportional-plus-reset, and proportional-plus-derivative control models available

Top control performance with maximum simplicity plus standard Bristol precision measuring elements—those are the key features of the Bristol Series 532 Recording Controller. The 532 uses the same renowned elements that have earned such a reputation for

accuracy and dependability on other Bristol automatic controlling and recording instruments—perfected through wide experience and many years of development.

Self-contained modular design of the control unit speeds servicing. The whole modular unit, consisting of an aluminum casting with working parts made of stainless steel, Ni-Span C, and Neoprene diaphragms, can be removed by taking out only two screws and a link.

The die-cast aluminum instrument case ( $15\frac{3}{4} \times 10\frac{3}{4} \times 5\frac{3}{4}$  overall) presents a streamlined appearance and is completely dustproof and weatherproof.

Write for complete data on the new, versatile, economical 532 A/D. The Bristol Company,\* Bristol Road, Waterbury 20, Conn., a Subsidiary of American Chain & Cable Company, Inc.



O. 46

### CONTROL UNIT CHARACTERISTICS:

**PROPORTIONAL BAND:** 0-400% continuously adjustable, direct- or reverse-acting.

**RESET:** 0.1 to 100 repeats per minute.

**DERIVATIVE:** 0 to 10 minutes derivative time.

**AIR PILOT:** Non-bleed type.

**PILOT CAPACITY:** Over 3.0 scfm.

**FREQUENCY RESPONSE:** Essentially flat to 300 cycles per minute.

**TEMPERATURE STABILITY:** Less than 0.1% change in the output pressure for 90°F temperature change.

**CHART:** 8" diameter; wide variety available.

**MATERIAL:** Aluminum housing; 316 stainless steel internal parts; Ni-Span C feedback element.

### RECORDING CONTROLLERS OFFERED FOR:

**PRESSURE AND VACUUM:** Ranges from full vacuum to 15,000 psi.

**TEMPERATURE:** Ranges from -100°F to +1000°F.

**FLOW AND DIFFERENTIAL PRESSURE:** With mercury-type manometer and dry-type differential unit.

**LIQUID LEVEL:** With bulb unit and mercury manometer and dry-type differential unit.

**HUMIDITY:** Zero to 100% relative humidity.

**BRISTOL** ...for improved production through measurement and control  
AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

\*Advanced Design

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*Lindsay*

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George A. Williams

These men are always ready to visit your mill and consult with you regarding any Fourdrinier wire problems that may arise.

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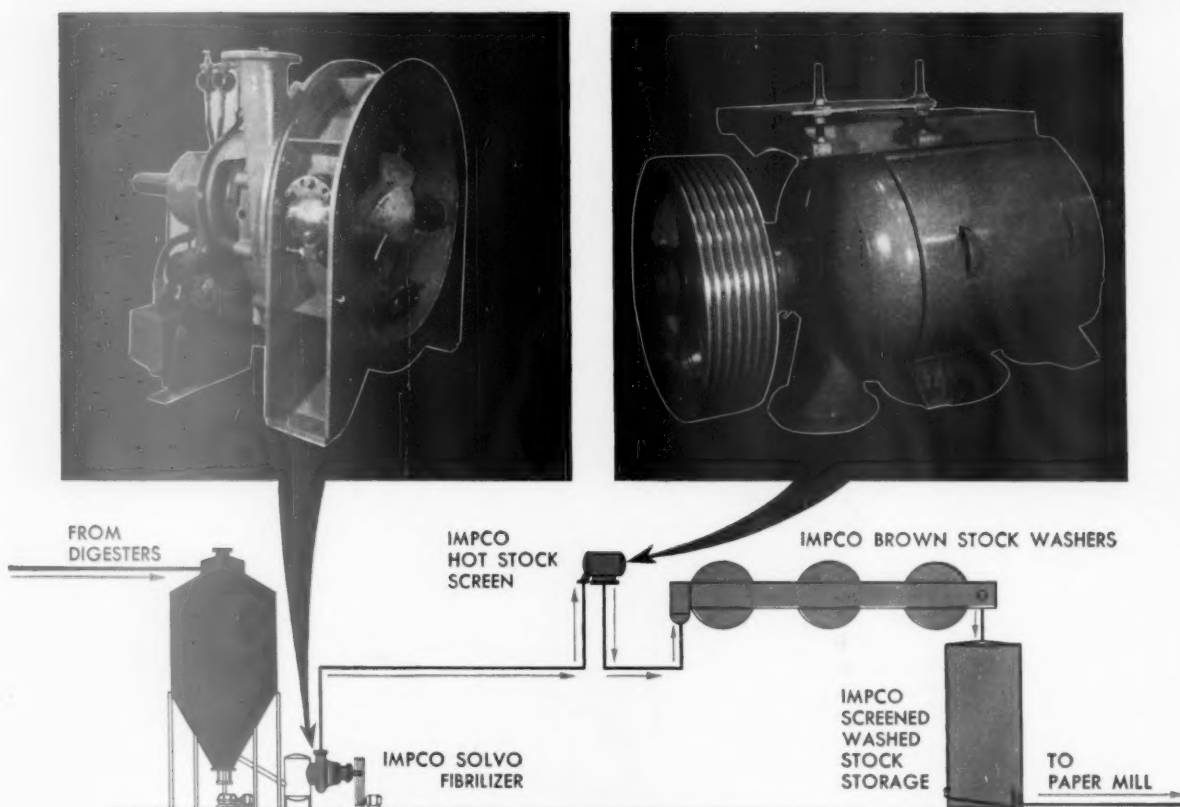
Charles P. Thompson

THE

WIRE WEAVING COMPANY

CLEVELAND 10, OHIO

# Impco *Again* Simplifies the Pulping Process with the Fibrilizer and Hot Stock Screen



The new Impco Fibrilizer and Hot Stock Screen combination has opened the door to vast savings for the industry.

The Solvo Fibrilizer produces a combined action of pulp classification, complete soft knot defibering (not refining), hard knot shredding, higher initial yield and eliminates knot handling. Its built-in pumping action eliminates the need for a stock pump. All these operations are being accomplished for about one-half horsepower days per ton.

The new Impco Hot Stock Screen, installed directly ahead of the primary stage brown stock washer, is now producing quality pulps in several mills. This development virtually obsoletes the need for separate washed-stock screening of most paper and all board grade pulps.

The arrangement shown can be installed for high yield Kraft and Sulphite pulps with only the screen rejects requiring refining.



**IMPROVED MACHINERY INC.**  
NASHUA, NEW HAMPSHIRE

IN CANADA: SHERBROOKE MACHINERIES LIMITED, SHERBROOKE, QUEBEC



# Glosscoat: on-machine cast coated boxboard

is produced in colors and high calipers up to .036 by Interstate

MIDDLETOWN, OHIO—A new patented method of cast coating direct on the board machine has been announced by Interstate Folding Box Co., Inc. With its Glosscoat process, not only pastel colors and heavy-weight high gloss board are produced, but the new method of cast coating direct on the board machine results in all the advantages and economies provided by a single continuous operation, says Interstate President Robert M. Bergstein.

In making Glosscoat, a thin layer of mineral coating is formed on a chrome-plated heated drum. The coating is rapidly dried as the drum revolves

and this dried clay coating is brought into contact with the paperboard, which has already been coated with a special adhesive mixture. The clay coating on the drum is transferred and permanently bonded to the adhesively-coated paperboard by the pressure of a roll against the drum, and then the coated board is stripped from the face of the drum.

The coating is done on Interstate's 6-cylinder 100 in. wide board machine at its Miamisburg, Ohio, boxboard mill. The coater weighs 50 tons and is mounted on a sturdy vibration-free platform above the end of the ma-

chine. Coating is applied after the final smoothing calender.

Glosscoat has high resistance to fading; is produced in 10 colors, plus white, it is flexible and will not crack or peel, even when folded at 180°. Because the coating does not deteriorate with age, it resists dust, water, grease and general shelf abuse. No overprint varnish is needed, it is said.

Inventor of Glosscoat is Frank D. Bergstein, executive vice president. He and his brother Robert emigrated from Hungary to the U.S. They own the business—a completely family-owned paper company. ■

## ..... FORESTRY

# Industry plants 500,000 acres; seeding up

WASHINGTON, D.C. — Approximately 500,000 acres will be planted and seeded by the forest industries during the 1960-61 planting season ending this spring, according to American Forest Products Industries, the nationwide Tree Farm sponsor.

Of notable importance this year is the news that in the neighborhood of 100,000 acres will be direct seeded. This acreage figure is an all-time high for the forest industries and is up 25% over the previous season. Direct seeding, the sowing of seeds from helicopters and planes and by other mechanical means has been made economically feasible in recent years by treating the seeds with a substance repellent to birds and animals.

**The AFPI survey was based** on detailed questionnaires returned by 200 companies who produce pulp, paper, lumber, plywood, hardboard and other forest products. The 1960-61 planting season totals will be close to the previous year's figure of 520,150 acres reforested, said Young Rainer, AFPI staff forester. Weather will be a major factor in determining the final amount of planting and seeding, said Mr. Rainer, along with availability of planting stock and ground condition.

There are four definite trends which were pointed up by the survey:

(1) Increased direct seeding by plane or helicopter.

(2) Establishment of seed orchards to produce better trees. (Editor's

note: see article in Pulpwood World in this issue.)

(3) Increased emphasis on harvesting methods to provide for natural reforestation.

(4) Increased site preparation and rehabilitation of forest land before planting or seeding.

Direct seeding has several advantages over planting seedlings. One company reports its seeding costs are \$7.15 an acre while hand-planting is estimated at \$25 and up for each acre.

"Techniques in reforestation change every season," Rainer said. "Since World War II, mechanized planting has become highly developed. One company reports it can plant up to 20,000 trees a day with a three-man crew, using machine planters pulled by a tractor.

### "Direct seeding is even faster.

For example, a helicopter moves 45 miles an hour while broadcasting seed. One company reporting on direct seeding says it can seed four acres a minute."

(According to U.S. Forest Service figures for the 1959-60 planting season which ended June 30, 1960, the forest industries direct seeded 80,231 acres. Thus the unofficial 100,000 acres figure reported by companies in the AFPI survey indicates a significant jump. Direct seeding has been moving along at a fast pace. In 1957, only 16,246 acres were covered by seeding on industry lands.—Ed.)

"Our survey also points out clearly that more companies are spending considerable time and effort in cultivating the ground ahead of a seeding or planting, the same way a farmer prepares his land for a new crop."

A number of companies, particularly in the South and the Northwest, are working to produce superior trees through grafts and cross-breeding in seed orchards. The forest industries are looking for better, faster growing trees to use in reforestation programs.

### Refined methods of harvesting

are protecting little trees remaining in a harvested area and foresters are more careful in leaving fast-growing well-formed seed trees to establish a better future crop through natural reseedling.

Comments with the return of questionnaires covered many topics:

**Champion Paper and Fibre Co.,** Carolinas-Georgia operation: "One half of the 1960-61 planting program is in areas which were prepared for planting." Champion will plant 3 million trees and direct seed 150 acres.

**Container Corporation of America** Fernandina Beach, Fla.: "Free seedling program, 3 million seedlings given to private owners; loan of tree planters to private individuals; and technical assistance in regard to planting." Container is also preparing sites on cutover lands . . . turn to p. 29

# **Quality + Efficiency in Papermaking**

## *... with MASONEILAN Drying and Drainage Systems*

An essential element in the production of quality papers is proper drying — obtainable only through accurately controlled steam, efficiently applied to driers.

Masoneilan Drying and Drainage Systems are individually engineered for each paper machine to provide accurate control of steam pressure to the driers and continuous evacuation of condensate, air and non-condensables from all driers, through means of closely controlled differential pressures. This insures improved paper quality, reduced tonnage losses, maximum drying efficiency, and increased machine speed and flexibility.

These systems are available for Single and Multiple Section Paper Machines and for Yankee Driers, including Warm-up Control and Automatic Surface Temperature Control. Mason-Neilan engineers the systems and furnishes all equipment and controls — one source and undivided responsibility — for both new and rebuilt machines.

### **Send for Bulletin PD 113 ...**

for descriptions of basic Masoneilan Control Systems and related equipment; and for cooperation in engineering, contact a Masoneilan representative or write direct.

## **MASON-NEILAN**

*Division of Worthington Corporation*

**65 NAHATAN ST., NORWOOD, MASSACHUSETTS**

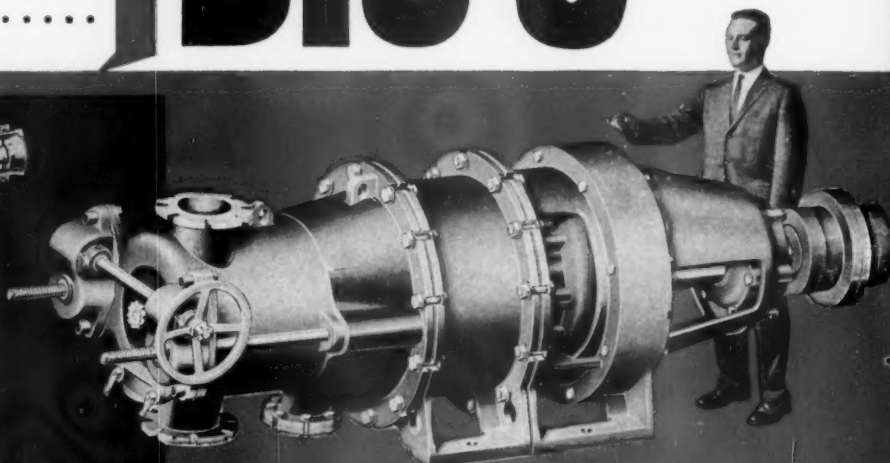
*Sales Offices or Distributors in Principal Cities in United States and Abroad • In Canada: Worthington (Canada) Ltd., Mason-Neilan Division*

- *Big Capacity*
- *Improved Treatment*
- *Operating Economy with the Morden . . . .*

# BIG 8 REFINER



FIGURE 5. Big 8 Stock-Maker Refiner, illustrating reverse flow, cushioning principle. Stock enters hollow rotor at A, is forced between bars on rotor B and shell C where the opposing internal flow pressures hold a full cushion of stock, permitting heavy bar loading for maximum brushing, combing and fraying of the fibers. Cutting action is at a minimum.



MORDEN BIG 8 STOCK-MAKER  
300-400 CONNECTED H. P.

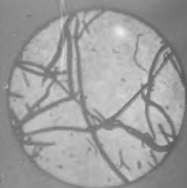


FIGURE 1. Untreated pulp. Freeness, 625 Canadian Standard. Tear factor, 85.



FIGURE 2. Medium treatment by Morden Stock-Maker. Freeness, 900 Canadian Standard. Tear factor, 85.



FIGURE 3. Medium jordaning treatment. Freeness, 275 Canadian Standard. Tear factor, 55.

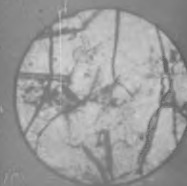


FIGURE 4. Heavy treatment by the Stock-Maker. Freeness, 75 Canadian Standard. Tear factor, 60.

The perfect refiner is yet to be built. But, the development which comes closest to refining perfection, customers tell us, is the MORDEN BIG 8 REFINER. Here is the BIG MORDEN 300-400 H. P. engine which provides the maximum in stock treatment. . . . Good Mullen • Improved tear retention • Excellent fold and tensile development • Printability specs met with ease through precision stock treatment.

**THE SECRET IS MORDEN'S DEVELOPMENT OF THE FIBERS.** The incompatibles, Good Mullen and Good Tear Retention at Minimum Freeness Reduction, are made compatible in the MORDEN BIG 8 REFINER through its brushing, combing action, which develops and frays the fibers with minimum cutting. The photomicrographs tell the story. FIGURE 1 shows unbleached sulphite prior to refining. FIGURE 2, the same fibers after medium treatment in the Morden Stock-Maker Refiner. Note the fraying and brushing imparted to each fiber. FIGURE 3, the same fibers treated to about the same level of freeness with a jordan. Notice how the fibers are cut, not frayed. FIGURE 4, the same fibers as Figure 2, except that the MORDEN refining treatment has been carried to much lower freeness. Even so, the tear in Figure 4, with twice as much MORDEN treatment, is better than figure 3 with medium jordaning.

**HOW FIBER DEVELOPMENT IS ACHIEVED AND CUTTING MINIMIZED.** Morden's unique reverse-flow principle, with opposing internal flow pressures,

provides a constant cushion of stock between the shell and rotor bars, permitting maximum brushing and fraying, with minimum cutting of the fiber. SEE FIGURE 5. Result: GOOD MULLEN and EXCELLENT TEAR RETENTION at MINIMUM FREENESS DROP, INCREASED MACHINE SPEED & DRYER CAPACITY FOR INCREASED DAILY PRODUCTION. **POWER SAVINGS.** Over and over again customers tell us that Morden Stock-Makers provide better stock treatment, yet consume less power . . . in some cases savings up to 50% are reported. A 400 H. P. MORDEN BIG 8 uses only 70 to 90 of its connected H. P. for idling load, leaving 310 to 330 H. P. for efficient stock treatment. Compare this efficiency with any other conical refiner, where usually up to 50% of applied energy is consumed for idling load. **LOWER INVESTMENT COST.** When all other costs are going up, Morden has improved the design, retained the efficiency but has reduced the cost approximately 20%. Built-in motor is a cost and space-saving option.

**LOWER MAINTENANCE COST.** Chrome steel fillings are recommended for furnishes in a pH range of 6 or above. Bronze fillings in furnishes with pH 6 and below. Fillings usually give 3 to 5 or more years of trouble-free service. Precision-machined cast fillings require no grinding-in. Down time cut to a minimum. Constant load maintained easily. Superior fillings and fine machine design result in minimum maintenance.

*Mordenize . . . .*

## YOUR STOCK SYSTEM

. . . send for full information on the MORDEN BIG 8 REFINER.



**MORDEN  
MACHINES COMPANY**

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3420 S. W. MACADAM AVENUE  
PORTLAND 1, OREGON



from p. 25 . . . with a harrow and is reclaiming non-productive oak ridges which have soil capable of producing a pine timber crop.

**Coos Bay Pulp Corp.,** Coos Bay, Ore.: "Our present plans tend toward aerial seeding of currently logged lands. Planting stock is used almost entirely in rehabilitation work on old pastures, brush lands, severe sites, etc."

**Riegel Paper Corp.,** Bolton, N.C.: Riegel provides temporary employment during planting seasons to 450 farmers and laborers; 30 to 50% of annual planting is on land drained to improve productivity.

**Union Bag-Camp Paper Corp.,** Franklin, Va.: The company annually is increasing its aerial or direct seeding and natural regeneration of loblolly pine, which is cheaper and more satisfactory than wild land planting.

**Crown Zellerbach Corp.:** "Of prime importance is planting or seeding of freshly logged areas of high site potential. There is also the constant program of brush land rehabilitation, hardwood spraying, thinning, pre-logging, re-logging and salvage logging."

**Packaging Corp. of America,** Filer City, Mich.: "Project Forever Green," in which qualified private landowners in certain townships are assisted in a planting program, is sponsored by the company.

**Kimberly-Clark of Minnesota, Inc.,** Two Harbors, Minn.: "Our planting program is divided into two phases: 50% of planting is on cutover land to improve quantity and quality of stocking; the other 50% is on non-productive brush areas that have been readied by use of modern site preparation equipment."

**Boise Cascade Corp.,** Valsetz, Ore., Division: "We have been planting since 1954 and aerial seeding since 1951. Most of our non-stocked cutover land that will probably not restock naturally has been planted or seeded. We shall continue this practice until all our lands are in full production."

**Longview Fibre Co.,** Longview, Wash.: "Program includes site preparation by mechanical scarification and chemical spray. Nearly all acres being logged are immediately seeded to prevent encroachment of brush and secondary species."

**Halifax Paper Co.,** Roanoke Rapids, N.C.: Conversion of 2,000 acres of understocked land to plantations is planned each year. The company is also supporting a "Plant a Million" pine seedling program for its home county.

## USFS reduces stumpage appraisal price

PORTLAND, ORE.—A downward adjustment in appraised stumpage prices of USFS timber to be sold in the Pacific Northwest has been announced by Walter H. Lund, asst. regional forester in charge of timber management.

This revision—based on values of logs delivered at the mill pond—facilitates lower appraised price of forthcoming timber sales by varying amounts according to log-grade com-

position of the stand concerned. A reduction of around \$3-\$4 per thousand board feet is to be made for Douglas fir sawlogs, Mr. Lund told PULP & PAPER. For sales involving about half peeler-grade logs, the reduction will be around \$2. He attributed the reduction differential to the fact that the price pinch in peeler grades preceded a similar effect in the sawlog category and that correction

factors had already been applied to the peelers.

"The continued low level of the lumber and plywood markets, which has contributed to the downward revision in stumpage prices, also caused diminished national forest timber receipts during 1960. Value of the 1960 harvest was \$72 million contrasted to an \$86 million value in 1959," stated Mr. Lund.

## Reshaped wood key to conservation

CORVALLIS, ORE.—That "constructive conservation" depends upon the utilization progress and the marketing success of the pulp and paper, board and allied industries was driven home to a group of 500 foresters at the annual meeting of Oregon State University (former College) School of Forestry alumni. The speaker was Robert V. Hansberger, president of Boise Cascade Corp. of Boise, Ida., a large and fast-growing diversified forest products firm with widespread production, distributing and marketing facilities.

Mr. Hansberger's message:

Forest conservation requires high stumpage values because conservation costs money. It costs more to log defective timber, to thin stands, to selective cut, to prune, to plant, to bring in large branches and tops. In

a competitive economy these higher stumpage values can only come from the economic value of the products of stumpage.

Trends indicated by the past markets for lumber offer little hope of providing increased stumpage values to support improved conservation programs in the future. These values can only come from more advanced forms of the "reshaping of wood."

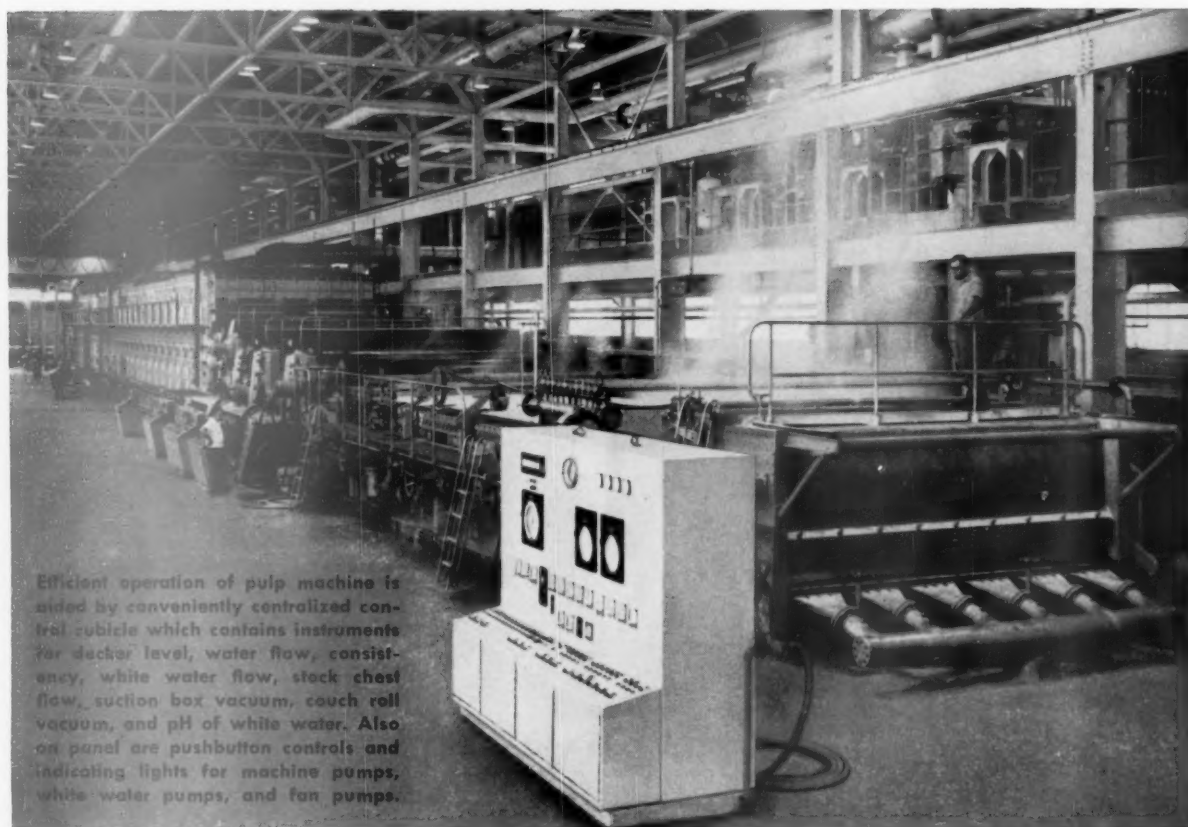
If all the profit from the manufacture of chips at a sawmill were assigned to stumpage, it could add as much as \$3 per MBF to stumpage values. This increased stumpage value could make it possible to bring in from the forest many lower grade logs and tree components which now must be left behind.

As the rapidly expanding paper market places added demands upon

the forest products industry for more waste wood, the value of this by-product material in the form of chips will increase and produce still further enhancement in stumpage values.

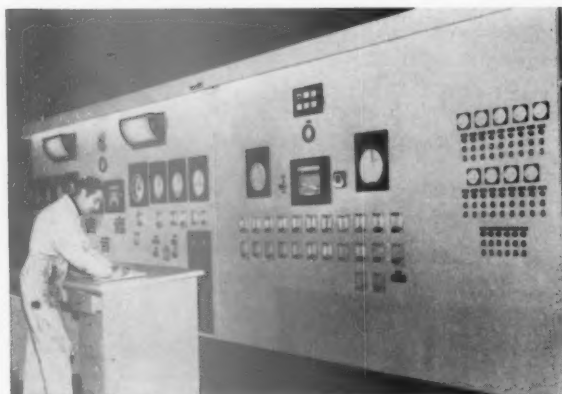
Each of such increases will serve conservation by permitting the bringing in of additional wood products from the forest without cutting any more sound trees. And, in addition, higher stumpage values will support more expensive forestry practices aimed at producing greater forestland regeneration and growth rates.

"So the amount of conservation we can afford will be determined not by the market for lumber, but by the market for advanced forms of reshaped wood, for it is from such products that we will derive the economic compensation for more expensive conservation practices."



Efficient operation of pulp machine is aided by conveniently centralized control cubicle which contains instruments for decker level, water flow, consistency, white water flow, stock chest flow, suction box vacuum, couch roll vacuum, and pH of white water. Also on panel are pushbutton controls and indicating lights for machine pumps, white water pumps, and fan pumps.

## Pushbutton pulping boosts quality and production at new Alaska mill



Controls for recovery boilers and liquor evaporators are grouped on one panel. Throughout the process, all variables are precisely measured and controlled, so that the mill can produce consistently high grade alpha cellulose with maximum economy and efficiency.

Honeywell controls make pulping completely automatic at the new sulfite mill of Alaska Lumber & Pulp Company, near Sitka. Built to supply cellulose to Japan's rayon industry, the mill daily produces 340 tons of top grade dissolving pulp, and is a fine example of the efficiency and quality control that inevitably result from modern instrumentation.

Controls for each application were chosen from the complete line of Honeywell instruments. Cam programmers automatically steam all digesters. In the acid plant, *ElectroniK* instruments record burner temperatures measured by *Radiamatic* radiation detectors, and various temperature and flow controllers regulate liquor evaporators and recovery boilers. In the washing operation, *Tel-O-Set* miniature instruments control shower water flow and filtrate tank level. In the bleaching, ratio controllers accurately add bleach in relation to pulp flow. Automation is complete even to the *Dur-O-Pulse* telemetry system that monitors settling basin level at the filter plant and transmits the information to the turbine room panel.

Your nearby Honeywell field engineer can help you gain the many benefits of custom-designed, modern instrumentation in your own mill. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.—In Canada, Honeywell Controls, Ltd., Toronto 17, Ontario.

# Honeywell



*First in Control*

SINCE 1885

## MEETINGS

### ... April

University of Maine, Open House, Orono, Maine—April 28-29

### ... May

Pacific Coast Div. PIMA, joint meeting with Tappi, CPPA, Harrison Hot Springs Hotel, Harrison Hot Springs, B.C.—May 4-6

TAPPI and the Instrument Society of America Pulp & Paper Instrumentation Symposium, Northland Hotel, Green Bay, Wis.—May 10-12

National Paperboard Assn., Fairmont Hotel, San Francisco, Cal.—May 10-12

Pennsylvania-New Jersey-Delaware Div. PIMA, spring meeting, Yorktowne Hotel, York, Pa.—May 11-13

Connecticut Valley Div. PIMA spring meeting, Woronoco Park, Woronoco, Mass.—May 18

Michigan Div. PIMA, joint recognition night with TAPPI, Cull Harbor Inn, Richland, Mich.—May 25

Institute of Paper Chemistry Executives' Meeting, Appleton, Wis.—May 25-26

### ... June

CPPA conference on Chemical Pulping and Bleaching, Saranac Inn, New York—June 7-9

PIMA National Meeting, Hotel Robert Meyer, Jacksonville, Fla.—June 7-9

Institute of Paper Chemistry, Sixth Seminar, Appleton, Wis.—June 11-30

Zellcheming, Germany's annual technical meeting, Baden-Baden, West Germany June 27-30

### ... August

TAPPI Lignin Symposium, Edgewater Beach Hotel, Chicago—Aug. 14-16

### ... September

TAPPI, 11th Corrugated Containers Conference, St. Francis Hotel, San Francisco, Calif.—Sept. 6-8

CPPA, TAPPI, Fourth International Mechanical Pulping Conference, Edgewater Beach Hotel, Chicago—Sept. 19-21

NW Div. PIMA, fall meeting, Faust Hotel, Rockford, Ill.—Sept. 20-22

British Paper and Board Makers Assn., International Fiber Bonding Symposium, Oxford, England—Sept. 25-29

### ... October

TAPPI Annual Engineering Conference, Shoreham Hotel, Washington, D. C.—Oct. 15-19

Packaging Institute, 23rd Annual National Packaging Forum, Biltmore Hotel, New York—October 18-22

PIMA, TAPPI—Joint Meeting, Equinox House, Manchester, Vt.—Oct. 19-21

### ... November

TAPPI, Annual Alkaline Pulping Conference, Rice Hotel, Houston, Texas—Nov. 1-3

at Marine Life—world's largest marinearium

## HAGAN COAGULANT AID KEEPS WATER CLEAR



Trainer Robert B. Andre feeding dolphins underwater in the main tank.

### Quick case history—reading time 59 seconds

Marine Life at Gulfport, Mississippi, incorporates the world's largest marinearium, a tank 82' in diameter, 17' deep, holding 750,000 gallons of sea water. There are, in addition, two smaller tanks, one of which houses the performing dolphins.

Water for the tanks is pumped from the Gulf, and is very turbid and carries a heavy load of algae bloom, particularly in the summer months. This constituted a serious problem for Marine Life, since spectators could not see the fish through cloudy water.

The use of Hagan Coagulant Aid No. 18 was suggested, and since its use was initiated, the cloudy water problem is gone. The water in the tanks is clear and sparkling, and according to Ken Gathe, Director of Exhibits, the far edge of the 82 foot tank can easily be seen through the observation ports.

Hagan Coagulant Aids are non-toxic, easy to handle, and produce a large,

tough floc that speed settling time and reduce carryover. They may be either dry-fed or slurry-fed. Write for Bulletin HSP 919 for information on the complete line of Hagan Coagulant Aids.



Overall view of the Marine Life marinearium.

## HAGAN

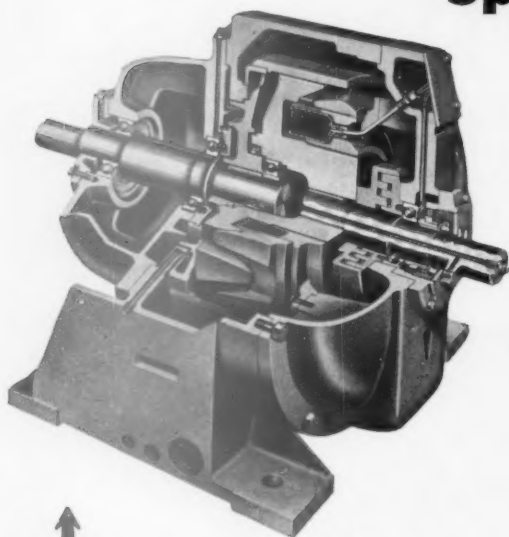
CHEMICALS & CONTROLS, INC.  
HAGAN CENTER, PITTSBURGH 30, PA.



HAGAN DIVISIONS: CALGON CO. • HALL LABORATORIES • BRUNER CORP



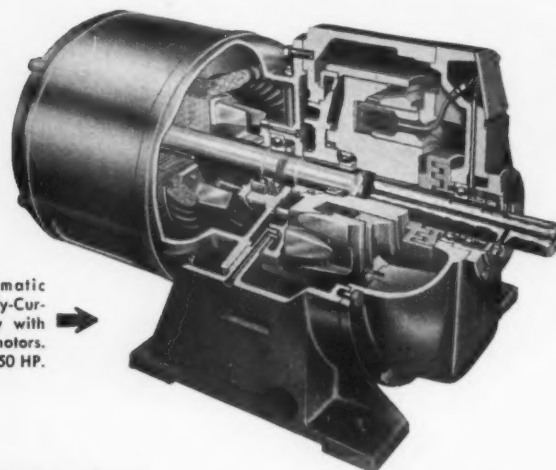
# The BEST Solution to Difficult Speed Control Problems—



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Dynamatic Liquid-Cooled Couplings provide infinitely adjustable speeds for nearly every application from 3 to 150 HP. Note the absence of slip rings, brushes, and commutators. Heavy-duty types with capacities up to 5,000 HP are also available.

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**DYNAMATIC**  
®

**LIQUID-COOLED EDDY-CURRENT  
COUPLINGS and DRIVES**



→  
"Dynaspede" Drives are Dynamatic Liquid-Cooled, Stationary-Field Eddy-Current Couplings mounted integrally with standard, D-flange, squirrel cage motors. Available in capacities from 3 to 150 HP.

## *Here's Why—*

Dynamatic Liquid-Cooled Couplings and Drives provide infinitely adjustable speed from a constant speed source—or constant speed from a variable speed source. They operate on standard alternating current. Rotary power is transmitted through the coupling by an electromagnetic reaction between the driving and driven members of the unit—there is no mechanical contact of rotating members to cause wear and require adjustment or replacement.

A wide range of standard and special control features may be obtained from a remotely-mounted electronic control system. Infinite speed adjustment, constant speed control, on-off clutch control, torque limit, acceleration control, inching, and threading are a few of the many functions available. The addition of an eddy-current brake to standard couplings or drives provides smooth, cushioned stops and controlled deceleration.

Liquid-Cooled Dynamatic Couplings and Drives deliver more horsepower than other types of the same physical size, thus conserving space in a busy machine area. Efficient heat dissipation permits continued operation at low speeds, or stall with full load. ●

Completely enclosed, Dynamatic liquid-cooled units are protected from dust, dirt, and other atmospheric impurities. Dynamatic design involves no brushes or slip rings; there is no possibility of arcing. With simple modification these units can be made explosion-resistant for hazardous applications.

Infinitely Adjustable Speeds  
from AC Power



Smooth, Quiet Operation  
from Cushioned Starts



Wide Range of Control Functions



No Slip Rings, Brushes  
or Commutators



Completely Enclosed Design



Greaseable Bearings



*Send for Our New Illustrated Bulletin.*

**EATON**

— **DYNAMATIC DIVISION** —  
**MANUFACTURING COMPANY**  
3122 FOURTEENTH AVENUE • KENOSHA, WISCONSIN





what big  
advantage  
does the

**AIR CAP<sup>®</sup>**

bring to  
papermakers?

for answer, please turn page

# Beloit AIR CAP<sup>®</sup>

## controls and improves board and paper drying



The Beloit Air Cap couples the drying potential of high-velocity air and a design of high efficiency. Concentrated drying capacity is combined with minimum heat and power requirements and a high degree of flexibility.

The streamlined design is of very practical significance. Beloit design minimizes the possibility of interference with the sheet, cleanliness is promoted,

and freedom from distortion is assured.

Cross machine correction can be provided. Beloit's arrangement has proved most effective in maintaining uniform moisture content for coating or at the reel. A Beloit representative will be happy to analyze the papermaking and

economic possibilities of applications on your machine and discuss all details involved.



**BELOIT**  
PAPER MACHINERY

*your partner in papermaking*

\*U.S. and Foreign Patents Pending

TEST SHEET

TEAR OFF THIS SHEET...

TEAR OFF THIS SHEET...

**WET IT!**

... THEN TEST IT! (USE APPROVED TAPPI STANDARD METHOD FOR TESTING WET STRENGTH.)  
NOTE THE HIGH WET STRENGTH AND HOW WELL THE SHEET MAINTAINS IT. FOR THE SECRET  
OF THIS SHEET'S WET STRENGTH, JUST TURN PAGE.

**CYANAMID**

THIS SHEET PRODUCED WITH CYANAMID'S PAREZ 607®

# MELOSTRENGTH® RESIN

GIVES YOU THE **WET STRENGTH** YOU NEED TO MEET EXACTING SPECIFICATIONS



Like all papers made with a MELOSTRENGTH Resin, this sheet has extraordinary strength even when soaked. It had its strength the moment it left the machine. It will keep its strength even under storage conditions of high humidity. It is resistant to most chemicals and acids. MELOSTRENGTH can be applied to papers of practically

every strength and grade. It is especially recommended for grocery bags because it minimizes bursting danger during rainy-day shopping or from frozen foods or other moist articles. MELOSTRENGTH is also ideal for the manufacture of bathmats, laundry tags, filter paper, butchers' wrap, photographic paper and other wet strength papers. For full information, get in touch with us.

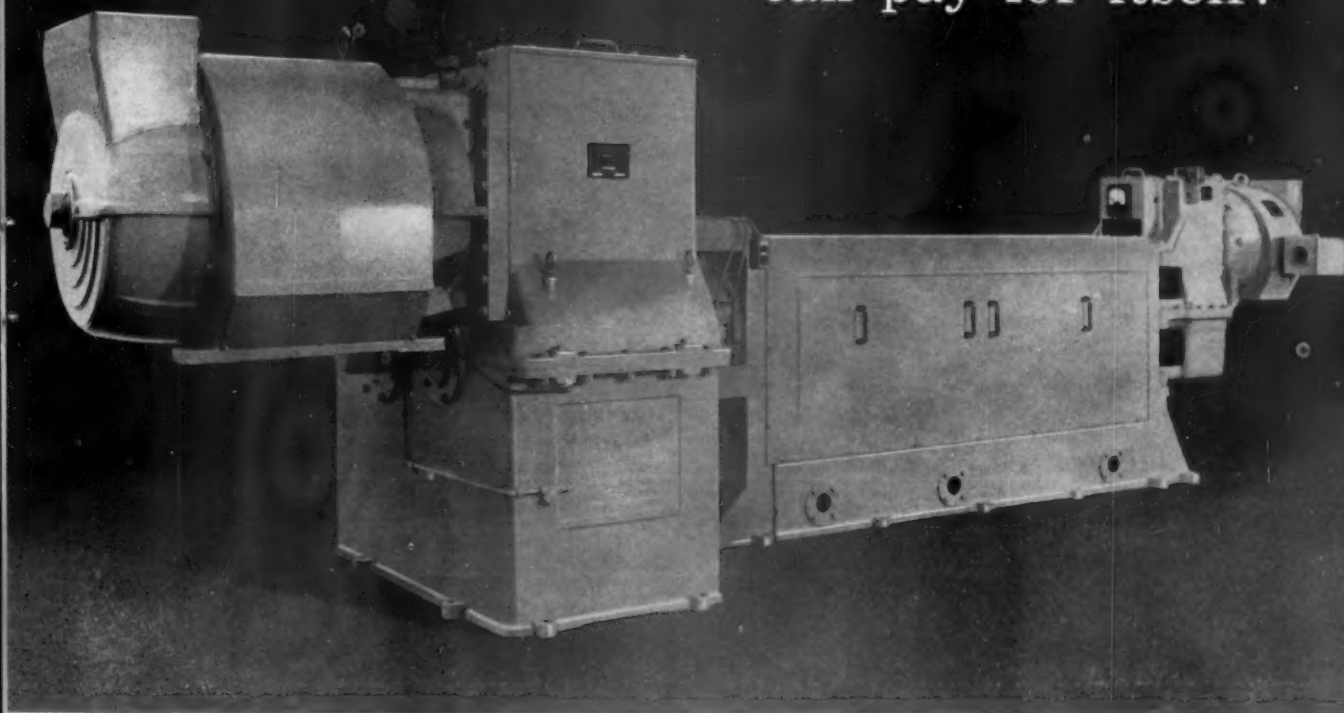
**CYANAMID**

AMERICAN CYANAMID COMPANY • PAPER CHEMICALS DEPARTMENT  
30 Rockefeller Plaza, New York 20, N. Y.



PROFIT STORY:

## New FRENCH press can pay for itself!



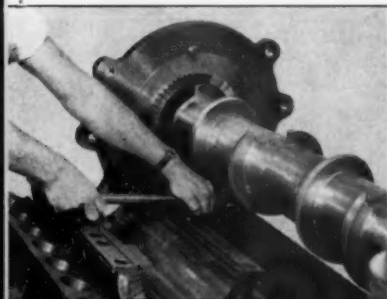
### *Economical 2-stage continuous screw press uses less power, achieves greater chemical recovery and increases machine production*

You use less power, because *one* French 2-stage press attains the same washing efficiency as two single stage presses arranged in series, and requires substantially less power. The French 77" barrel, with water injected midway, delivers up to 90% chemical recovery in a single pass. Added benefits are a thoroughly fiberized high quality pulp that usually requires less total refining power and often makes possible increased paper machine production. You buy *one* French 2-stage press instead of two small single stage presses for a substan-

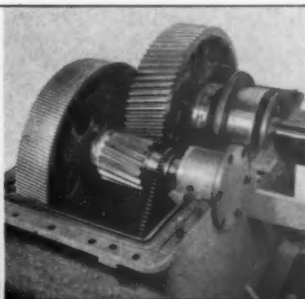
tial capital investment saving. Also 50% less floor space is required. Additional savings are realized because the French press is designed and built for years of trouble-free service. To discover why the new French 2-stage screw press can pay for itself, write for free Bulletin 100 entitled, "How the French 2-stage press cuts costs — increases production" to Dept. A-4.

**FRENCH OIL MILL MACHINERY CO.**  
PIQUA / OHIO

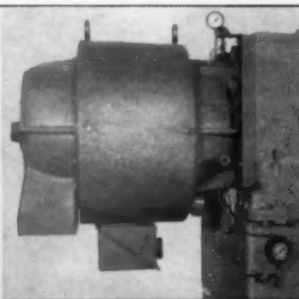
*Designers and builders of machines for the Process Industries*



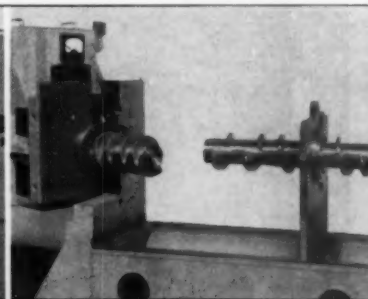
Main drain cage hinged for easy access. Cage can be furnished with inserts into which all wearing parts are assembled for quick removal and replacement.



Main drive gears have file hard surface hardened to full depth. Anti-friction roller bearings. Self-circulating lubrication.



Adjustable motor mount (pat.) enables operator to change press speed quickly by loosening motor support clamps, then backing up and raising motor by jack-screw.



Feed worm unit hinged to permit easy separation of feed worm from main shaft. Permits easy removal of wearing segments.

- 
- FAST, EFFICIENT DELIVERY
  - EXPANDED PRODUCTION CAPACITY
  - VAST NATURAL RESERVES

You get extra advantages when you specify these quality Trona® chemicals...

## SALT CAKE AND SODIUM CHLORATE FOR PULP AND PAPER

Unlimited Salt Cake reserves and uniform, dependable production at **TRONA**, Calif.... a 50% increase in Sodium Chlorate capacity at **ABERDEEN**, Miss.... plus extensive modernization at **HENDERSON**, Nev.... make Trona your best source of supply.



*American Potash & Chemical Corporation*

3000 West Sixth Street, Los Angeles 54, California 99 Park Avenue, New York 16, New York



## THIS IS RAYBRITE

For unusually high standards of brightness and cleanliness essential to specialty papers. Typical tests unbeaten: Canadian Standard Freeness 728; Tear Factor 0.59; Mullen Factor 14; Opacity 82.3%; G.E. Brightness 95.8%. Write for samples and full data.

## service

There's a successful way to meet competition and pulp problems when you're a Rayonier customer. You call for Technical Service and a pulp technician is on his way, bringing you broad-band experience, a total knowledge of our pulps, plus full support of Rayonier Research.

This way you derive every benefit inherent in great paper-making pulps, like Raybrite, a bleached softwood sulfite with exceptional built-in properties.

So when you need paper-making pulps, consider Rayonier first . . . where customer service comes first.

**RAYONIER**  
GREAT PAPER-MAKING PULPS



Rayonier Incorporated  
161 East 42nd Street  
New York 17, New York

**World's Most Complete Line of Paper-Making Pulps:** Western hemlock bleached sulfites; western softwood bleached sulfates; western red cedar bleached sulfates; southern pine bleached sulfates; southern hardwood bleached sulfates; southern pine bleached sulfites.



**PAPELERA PULPA-CUBA S.A., TRINIDAD, CUBA**

*This new integrated pulp and paper mill produces 100 tons per day of high grade bleached and unbleached papers from sugar cane bagasse fiber. Our Organization supplied this project with technical assistance and the major production equipment including a Horkel System for depithing and cleaning the raw bagasse, a Pandia Continuous Digester and the Black-Clawson four-drainer paper machine shown here.*

Completely depithed bagasse fibers



## NEW MILLS MAKING PAPER FROM BAGASSE AND STRAW



Wheat straw fibers

**EMPAQUES DE CARTON TITAN S.A.,  
MONTERREY, MEXICO**

*Under a package contract, we supplied principal equipment and start-up assistance for the recent expansion of this mill to produce 60 metric tons per day of unbleached wheat straw pulp for corrugating medium. Straw processing and pulping in a Pandia Continuous Digester is accomplished in this compact, semi-enclosed installation.*



These Latin American projects are but two of the 25 pulp and paper mills throughout the world for which the Parsons & Whittemore-Lyddon Organization has provided full or partial planning, technical, economic, and construction services. Twelve different papermaking

fibers are utilized among these projects. We even supervise start-up and train local operating personnel, and can arrange for sale of the output on world markets. For literature and full information on how our services can benefit your mill projects, write our nearest office.

### THE PARSONS & WHITTEMORE-LYDDON ORGANIZATION

*World leaders in the development of pulp and paper mills for the use of local fibers*

18-19 Savile Row, London W.1, England



5 Rue Jean Mermoz, Paris 8°, France

250 Park Avenue, New York 17, N. Y.



all about the new

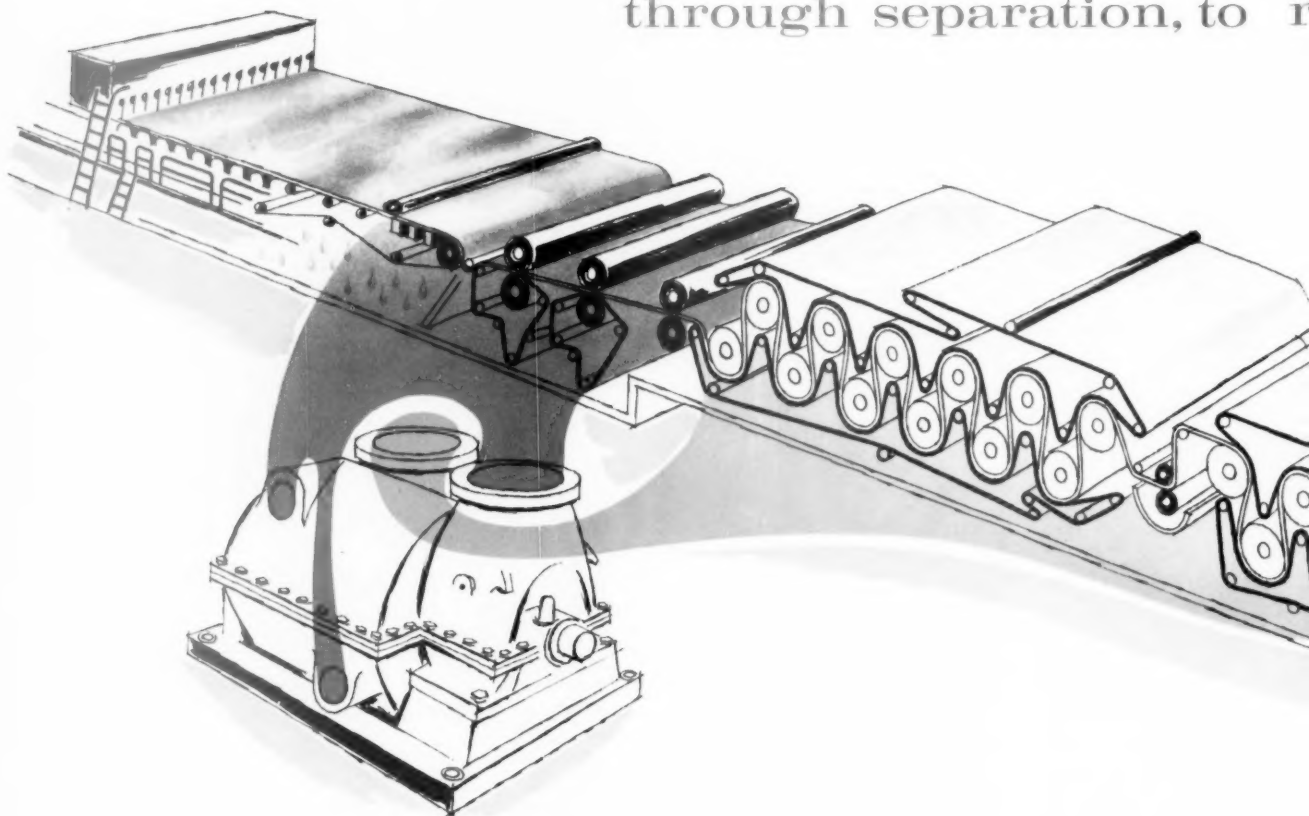
# VACU- THERM

paper machine  
vacuum system  
from  
Allis-Chalmers



complete engineering of vacuum s

through separation, to m



## **new Vacu-Therm System cuts power requirements; gives added efficiency in paper drying cycle**

**Now, Allis-Chalmers introduces** a new vacuum system for paper machine use. The new *Vacu-Therm* system consists of a centrifugal exhauster, appropriate controls and water separation equipment. Allis-Chalmers engineers the entire system from water removal right on through to provision of reusable exhaust for use in the paper drying cycle. You get one-source responsibility for design and service.

The new *Vacu-Therm* system provides many operational advantages over conventional systems now in use in this country.

### **BENEFITS OF THE VACU-THERM SYSTEM**

A centrifugal exhauster provides the vacuum for the system. Much of the power supplied to drive the centrifugal exhauster is recovered in the form of heated exhaust air for use in the paper drying cycle. On one 150-inch paper machine running at 2500 feet per minute, this heat of compression was evaluated as over 2,000,000 Btu/hr... a saving of \$10,000 per year.

In addition, this exhaust air is completely pure and clean, making it suitable for use on the most delicate grades of paper. Prior to compression, separators remove excess moisture and pulpy solids. Then heat of compression completes the drying of the air. Because all bearings are completely isolated from the air

stream, the air cannot possibly pick up oil or become contaminated while in the exhauster.

The *Vacu-Therm* system provides preset constant pressure over a wide range of volumes. Because range of volume is great, the system is suitable for many grades of paper.

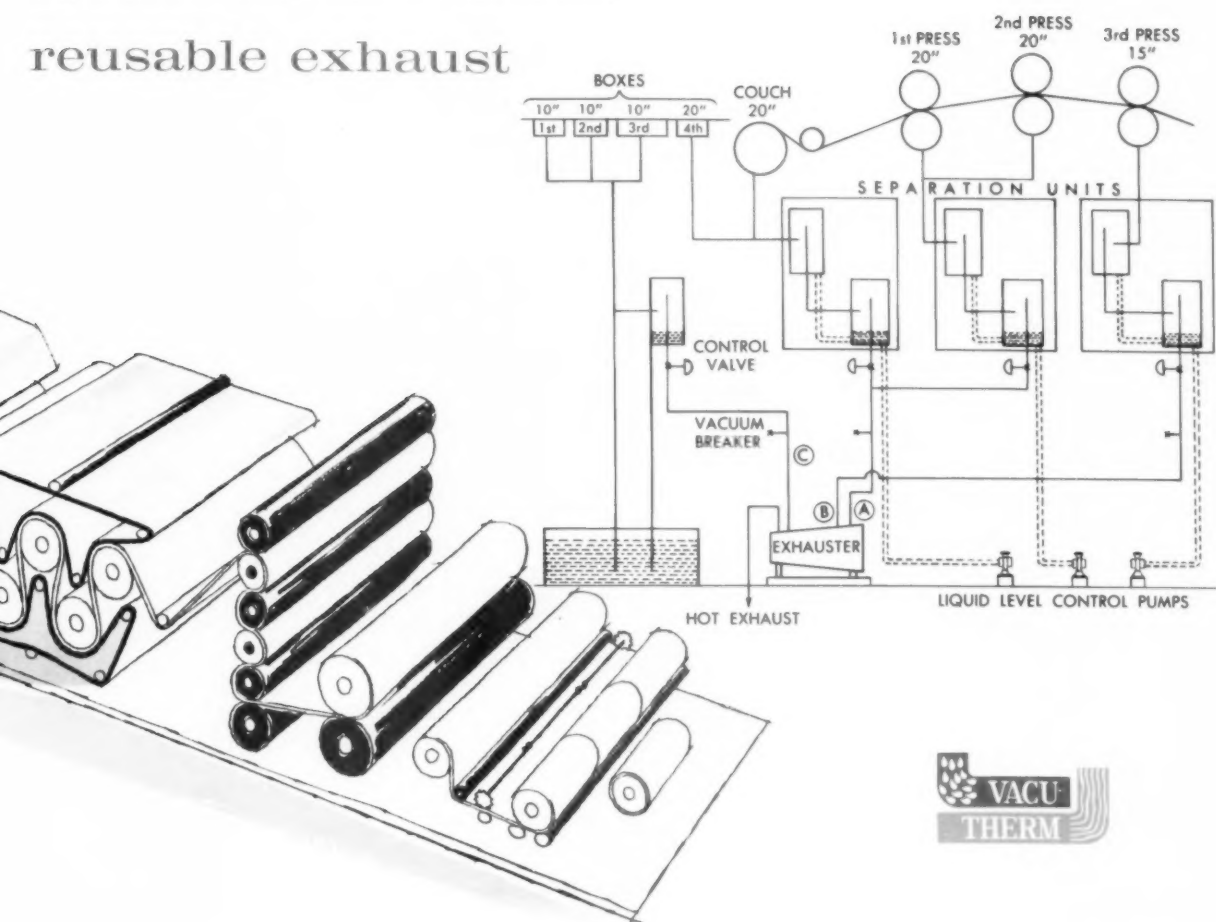
The centrifugal exhauster requires no make-up water. Only a small amount of cooling water is needed for the oil cooler. And where contamination exists, the cooler may be built of materials suited to the particular water problem.

On any paper machine, *only one* centrifugal exhauster is needed to supply all vacuum requirements. Space and foundation needs are simplified.

Bearings are the only wearing part. Pressure-lubrication system all but eliminates metal-to-metal contact... automatically insures against loss of oil.

Thousands of A-C centrifugal compressors and exhausters have been proved reliable in demanding industrial installations where downtime is evaluated heavily... exhausting of coke oven gas in the steel industry... providing "wind" for blast furnaces... compressing air or gas in the petroleum and chemical industries... supplying air for wind tunnels in the aviation industry.

# system from control, reusable exhaust



## THE CENTRIFUGAL EXHAUSTER

A centrifugal exhauster is a machine which takes a given volume of gas at a lower pressure and raises it to higher pressure by means of centrifugal force. Such devices taking air in above atmospheric pressure are called compressors... below atmospheric pressure they are called exhausters. Pressure is obtained through use of stages... each successive stage being at a higher pressure. Different vacuums may be obtained by tapping into the unit at different stages. Compression causes heat. This heat may be used in the paper drying cycle.

## HOW A TYPICAL SYSTEM OPERATES

In the proposed *Vacu-Therm* system diagrammed above, vacuum is required at three different levels: 10 inches, 15 inches and 20 inches of mercury. The first three suction boxes are the first suction point. Air and water drawn through the wire out of the stock at 10" Hg pass through a separator unit to remove excess water and solids. Clean air then enters the exhauster at point "C". Low vacuum level allows water to be removed from separator by gravity.

Stock next passes over the last suction box and the couch roll. Air and water are removed at these two points at 20" Hg and sent through a separation unit.

The first and second press rolls in this system are also at 20" Hg. But to avoid a mixture of felt-fibre contaminated water from these rolls with reusable water from the fourth box and couch roll, a different separator unit is used.

Air from the two 20" separator units then enters the exhauster at point "A". Pumps are used to remove water from these units.

Vacuum at the third press is 15" Hg and the air-water mixture passes through another separator unit before entering the exhauster at point "B".

## COMPLETE SYSTEM FROM ALLIS-CHALMERS

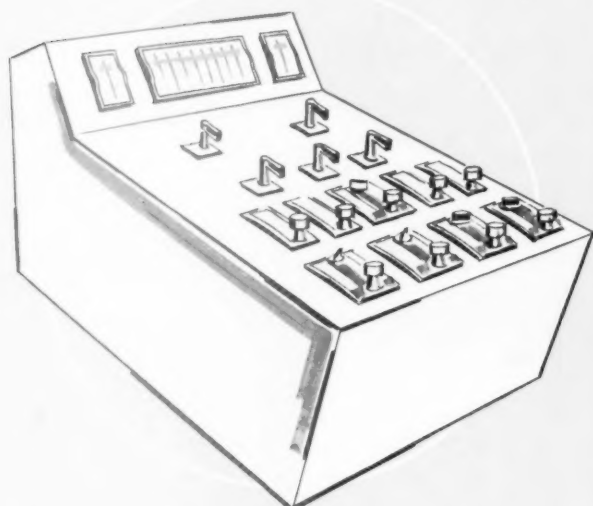
Allis-Chalmers can show you how to apply the new *Vacu-Therm* system in existing mills as well as to mills now in your plans for building and expansion.

You get complete system engineering, matched to the requirements of your machine. All vacuum control devices... all water separation equipment... all pumps... motors or other drive equipment... and the centrifugal exhauster are engineered together to give you low installation costs, trouble-free service, and long years of satisfactory operation.

**ALLIS-CHALMERS**

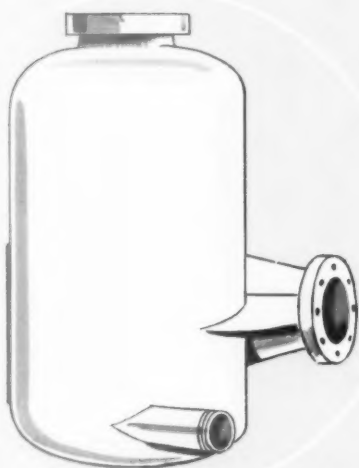


Vacu-Therm is an Allis-Chalmers trademark.



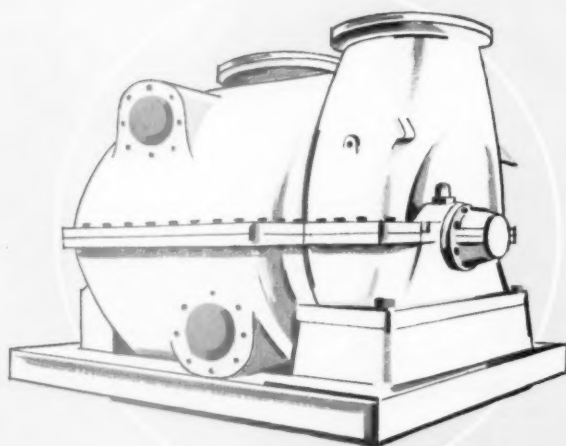
## vacuum controls

Allis-Chalmers engineers and supplies all vacuum controls for the new *Vacu-Therm* system. Vacuum at all vacuum levels is automatically maintained. And, appropriate controls are provided for protection under abnormal circumstances such as paper breaks. A unit control panel can be provided to accommodate set loaders, pressure switches and gauges. Vacuum control systems are specially designed for the needs of each particular paper machine.



## water separation

Water separation equipment for the new *Vacu-Therm* centrifugal exhauster vacuum system is engineered to individual requirements of each mill. The equipment used is usually of the cyclodial type. One or two stages may be used, depending on conditions to be met. Air and water enter the first-stage separator on a tangent to its cylindrical casing. Centrifugal force of the air and water entering, throws the water outward, allowing clean air to pass into the centrifugal exhauster.



## centrifugal exhauster

The multi-stage centrifugal exhausters used in the *Vacu-Therm* system are built by Allis-Chalmers. Their high-speed operation provides basic economies in selection of drives. Either motors or turbines can be used. Because the exhauster has a flat characteristic curve, the pressure is held constant over a wide range of volumes. Horizontally split, cast-iron casings contribute to their overall reliability.



**FOR MORE INFORMATION on the *Vacu-Therm* system and assistance in exploring its feasibility for use on your paper machine, call your nearest Allis-Chalmers sales representative. Or, write Allis-Chalmers, Industrial Systems Department, Milwaukee 1, Wisconsin.**

**ALLIS-CHALMERS**





# How To Keep Inventory Down And Maintain Felt Supply

The Albany Felt Company's **STANDING ORDER PLAN** solves two of the most pressing problems faced by mill operators today.

How to keep inventory down — and how to have the best paper machine felts on hand when needed without desperation orders or costly delays?

Now you can solve both these problems with **ALBANY FELT COMPANY'S Standing Order Plan!** The solution is as near as your Albany Felt Sales Engineer — or your telephone.

Under the **Standing Order Plan**, Albany Felt Company is authorized to ship a specified number of felts — made just for you — at regularly scheduled intervals, based on your anticipated needs. No reorders are necessary for the duration of the agreement.

Albany Felt then schedules manufacture of your felts in time to make certain that shipment dates are met. Since felts to meet your specific requirements are always in process for your future needs, you are constantly protected. Yet, the **Standing Order Plan** is flexible enough to allow for adjustment of inventory by revision of shipping dates.

If you should have an emergency, Albany Felt Company is then in a better position to quickly provide extra felts. On the other hand, if your stockpile should grow, a shipment can be delayed or omitted. Your only responsibility is for felts already woven; this number is small and agreed upon in advance.

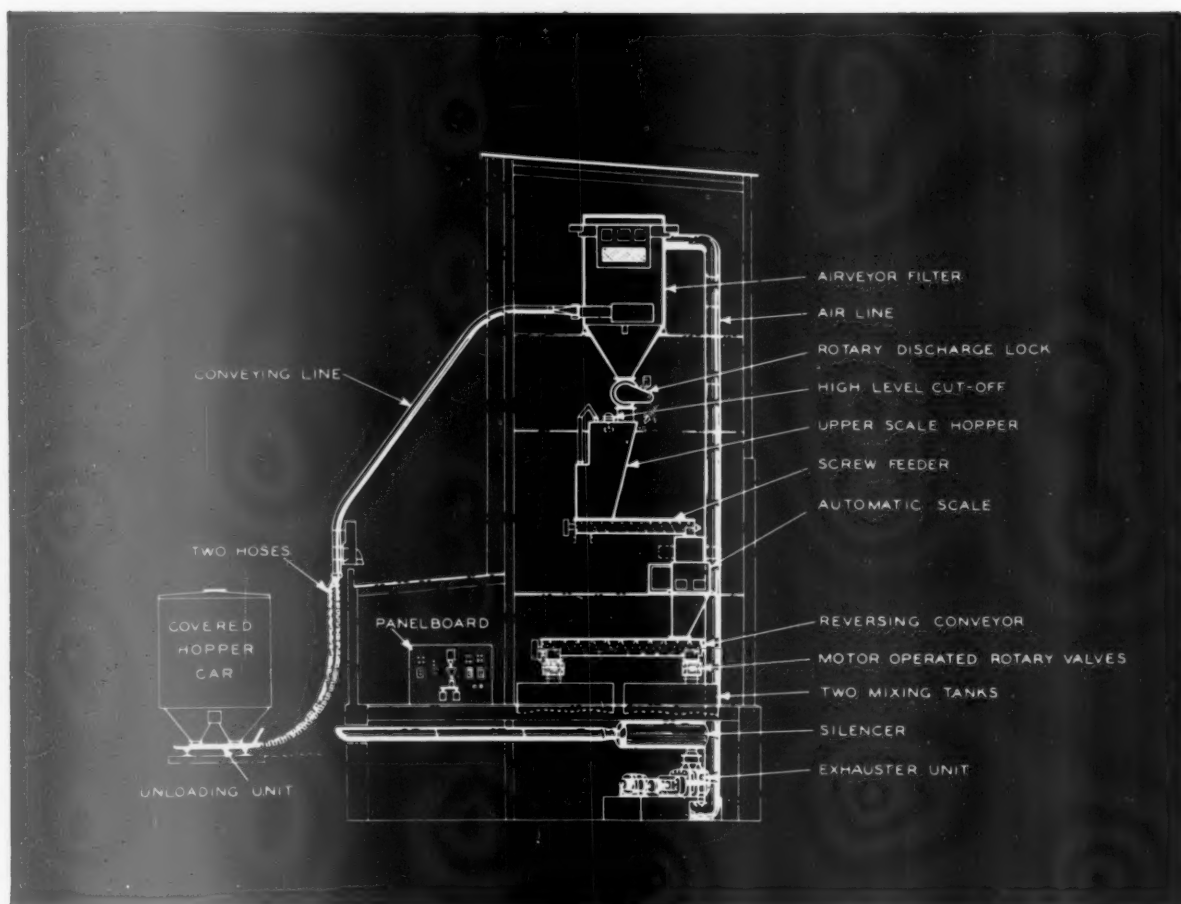
Knowing of the protection this plan affords, you can safely reduce the felts carried in your inventory. This reduces storage space requirements and frees funds for other purposes. In addition it saves worry, paper work and possible down-time.

Let your Albany Felt Sales Engineer work out your **Standing Order Plan**. . . or call today.

TALK **STANDING ORDERS** WITH YOUR  
ALBANY FELT SALES ENGINEER



N. Monmouth, Maine Hoosick Falls, N. Y. St. Stephen, S. C.  
Cowansville, Quebec Cuautitlan, Mexico



## Fuller conveying system helps paper mill cut clay handling time 65%

At New York & Pennsylvania Company's Johnsonburg, Pa., paper mill a new completely automatic clay slip preparation tower speeds production. New unloading equipment has a capacity of 25 tons per hour. This is in contrast with the old manual method in which 6 men worked 5 hours to unload 30 tons of bag clay. How did New York & Penn do it? With a pneumatic conveying system designed and built by the Fuller Company.

Clay is delivered by railway car.

Each car holds 50 tons of clay which drops by gravity through outlets directly into the unloading unit then into the conveying system. This consists of two 5-in. flexible hoses connecting into a main 8-in. conveying line. Clay is conveyed through a Fuller Airveyor® system to an Airveyor filter on the top floor of the building. From the filter, the clay is discharged into a surge hopper through a totally-enclosed Fuller rotary airlock. A Fuller high-level

indicator on the hopper automatically opens a vacuum breaker in the conveying line in the event that clay is unloaded faster than the equipment following the hopper can take it away.

In addition to eliminating a manual operation, the enclosed Fuller system has reduced New York & Penn's clay loss and improved their dust problem. Fuller's wide variety of conveying systems and components can help solve your problems, too. Why not write us today?

See Chemical Engineering Catalog for further details and specifications.

1951  
A 267



**FULLER COMPANY**  
128 Bridge St., Catasauqua, Pa.  
Subsidiary of General American Transportation Corporation  
Offices in principal cities throughout the world



# automatic profile record of paper and board thickness

the Foxboro  
Caliper Profiler

Put in a sample strip, push a button, and in a matter of minutes Foxboro's Caliper Profiler automatically gives you a continuous chart record of sheet thickness — all the way across the sheet.

The Foxboro Caliper Profiler meets all standards published in TAPPI's Code T411 m-44. It's accurate to 1/10,000 of an inch — takes samples up to 0.120 of an inch thick.

The Profiler offers a new high in quality control. Its continuous profile record shows exactly where caliper is off. No more time-consuming spot checks with hand micrometers. No awkward, cumbersome testing machines.

Get full details on how this remarkable Foxboro instrument can help you control the quality of your paper and paperboard. Write for Bulletin 10-12A today. The Foxboro Company, 994 Neponset Ave., Foxboro, Mass.

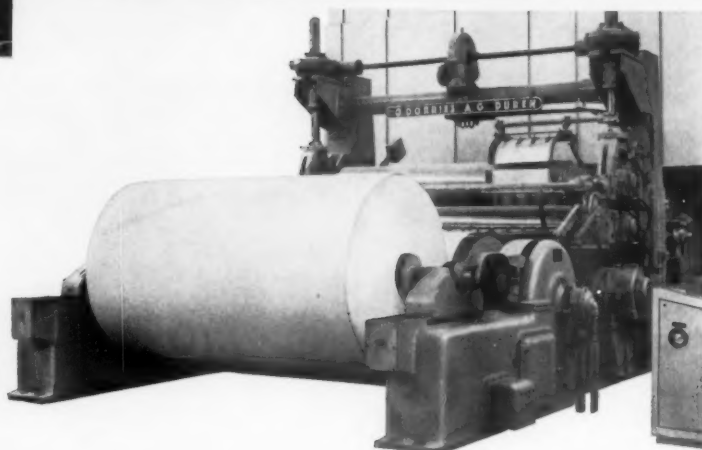
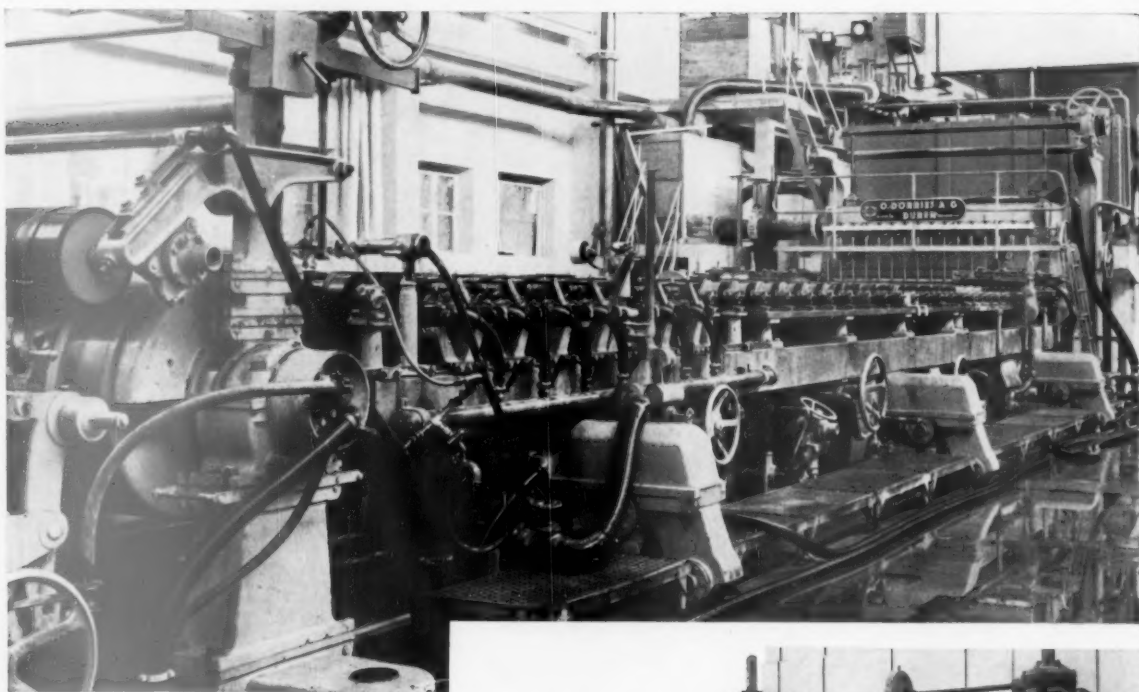


## FOXBORO

REG. U.S. PAT. OFF.

INSTRUMENTATION FOR THE PULP AND PAPER INDUSTRY

PULP & PAPER — April 17, 1961



## From the headbox to the reel



all construction facilities for an efficient production are fully employed and result in a very good end product at maximum capacity.

The machine is constructed for various grades of M. G. paper at a maximum speed of 300 m/min.

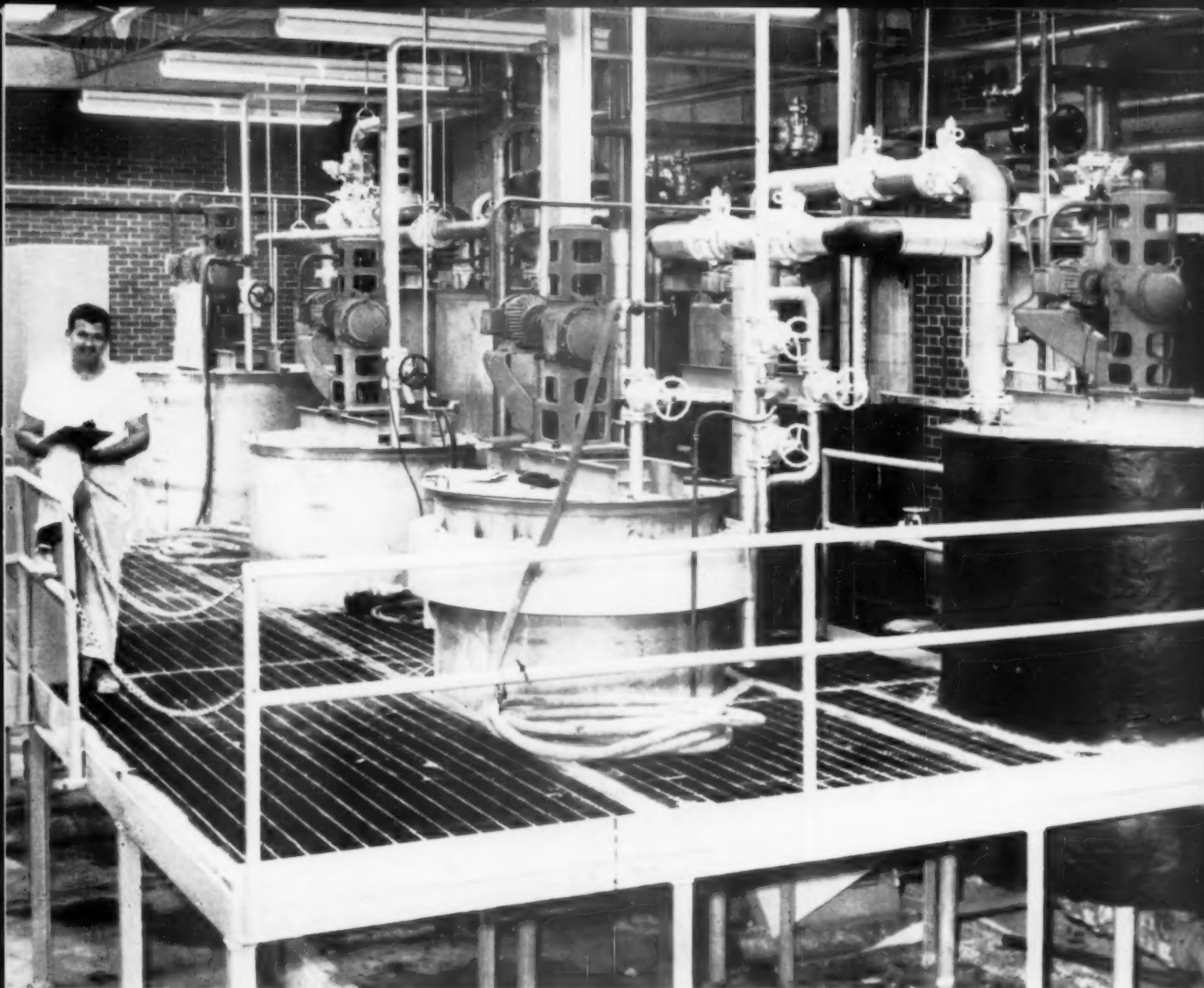
# O. DÖRRRIES A.G. DÜREN

Eisengießerei und Maschinenfabriken · Western Germany

Agents: Bulkley, Dunton Pulp Company, Inc.  
Telephone: Murray Hill 9-6400

295 Madison Avenue, New York 17, N.Y./USA  
Telex: TWY - NY 1 - 2092





Compact station employing seven LIGHTNIN Mixers feeds adhesive and coatings at St. Joe Paper Company, Port St. Joe, Florida.

## How to mix coatings and keep them mixed

If coatings and adhesives pose production problems in your mill, here's proof that they needn't.

In this kraft board mill, the coating and adhesive plant is a smooth-running operation that feeds uniformly consistent materials to the laminator 24 hours a day. A large part of the secret of its success is good mixing with LIGHTNIN Mixers.

### How coating process works

1. In the slurry make-up tank at the rear, a turbine-type LIGHTNIN Mixer swiftly incorporates dry clay into the liquid, breaking down all lumps and agglomerates.
2. Slurry then goes to the holding tank. Here another LIGHTNIN Mixer keeps it in uniform suspension without settling and without excess surface action.
3. Adhesive make-up and cooking take place in the next two tanks. LIGHTNIN Mixers disperse the solids evenly in these 500-gallon tanks, keep starch moving all through the cook, and prevent hot spots from developing.
4. Finished adhesives go to the two side tanks where

LIGHTNIN Mixers hold them uniform and prevent skinning over while cooling.

### Secret: controlled mixing

Four *different* mixing jobs. LIGHTNIN Mixers do them all—with never a worry about consistency or uniformity.

Wherever you need controlled mixing or agitation to help your mill system work better, you can get it with LIGHTNIN Mixers. You get the precise power level you need to accomplish the job you want done within a given time. Results are guaranteed.

Your LIGHTNIN Mixer representative can give you the details. He's listed in Thomas' Register. Or write directly to us.

***Lightnin Mixers***

MIXCO fluid mixing specialists

**MIXING EQUIPMENT Co., Inc., 141-d Mt. Read Blvd., Rochester 3, N.Y.**

*In Canada: Greey Mixing Equipment, Ltd., 100 Miranda Ave., Toronto 19, Ont.*

*In Europe: Lightnin Mixers, Ltd., Poynton, Cheshire, England*



Pure Titanium Dioxide

**RUTILE AND ANATASE GRADES**

*For maximum  
WHITENESS  
BRIGHTNESS  
AND OPACITY*

**R. T. VANDERBILT**  
COMPANY, Inc.

230 PARK AVENUE • NEW YORK 17, N. Y.

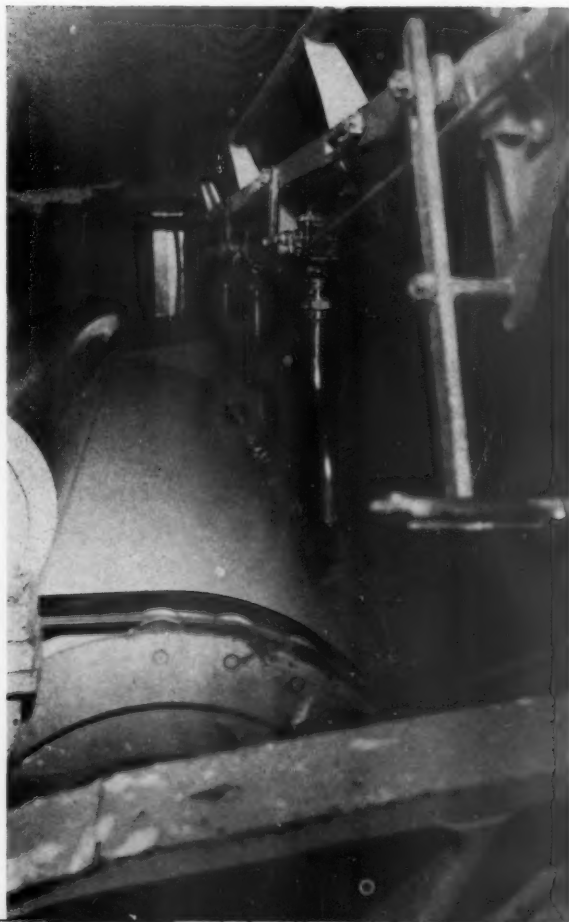
## Why Blandin Likes High-Speed, Off-Machine Coating

By taking the trailing blade coater which had been confined to breadwrap papers and applying it to high quality publication paper, Blandin has opened up new fields for this coating tool—has also upgraded from a groundwood specialty mill to a 100% coater . . .

BLANDIN PAPER Co. has achieved phenomenal success in a field of coating where even the experts were hesitant. In the process, Blandin has upgraded from a groundwood specialty paper mill to a 100% coating operation.

What this relative newcomer in the coating industry has done is take the Rice Barton trailing blade coater, which had been confined in application to breadwrap papers, and adapt it for high-speed off-machine production of publication papers.

Several important factors have con-



◀ **SECOND COATING HEAD** on the Rice Barton trailing blade coater at Blandin Paper Co. This is on the new No. 3 coater which is designed for coating speeds up to 3,000 fpm.

**BLANDIN'S HIGH SPEED** off-machine trailing blade coater consistently coats at speed of 2,000 fpm. Blandin coats 40, 43, 45 and 50 lb., adding 12 lbs. coating in each case.



## ... Blade Coating at Blandin

tributed to Blandin's success. One outstanding printing authority told PULP & PAPER, "Blandin has the best raw stock I've seen. They're real good papermakers. The company had a serious need to upgrade. Instead of following the conventional way, they asked what's the best way to do the job and they had the courage of their convictions. What's more, Blandin was not willing to accept preconceived notions of what couldn't be done."

Another reason for Blandin's success is that it went to off-machine coating. Explains Myles W. Reif, executive vice president, "We decided against the conventional so that if it did flop, we could still make paper on the machine." Blandin didn't flop. Not by a long shot.

Not only did Blandin upgrade, but its publication papers were causing such a revolution in the magazine field that other publication manufacturers began receiving orders from their printers marked:

"Must be blade coated."

**Development work on the coater** was a cooperative venture by Blandin, Look magazine and Rice Barton Corp. The first coater was designed to coat both sides of a 30 lb. base sheet with up to 5 lbs. of starch-clay coating per side at maximum coating speeds of 1600 fpm. This 113-in. wide unit was installed in 1955 and was so successful that Blandin decided to install a second off-machine Rice Barton trailing blade coater in 1959. However, looking toward the future of higher paper machine speeds, the second coater was designed for 3000 fpm coating speeds.

The second coater is 158-in. wide and has many new features based on the company's experience with the first coater. These included high velocity Rice Barton Gardner dryers and a complex arrangement of electric drives and tensiometers.

**Base sheet quality** is of utmost importance, stress Blandin officials, in the successful operation of off-machine trailing blade coaters. The coater must have good base material. One way Blandin insures this is at the paper machine winder. Herbert A. Mertz, coating technologist says, "With off-machine arrangement we have been able to rewind and trim the base roll from the paper machine and present a mechanically sound sheet to the coater. All machine breaks are spliced, holes removed and edges trimmed smooth and the rolls wound uniformly."

The Beloit winder operates at 3,500 fpm. The ability to cull defects at this station is one of the big advantages of this arrangement, for this cannot be done with on-machine coaters, says Blandin.

Another important factor in Blandin's successful off-machine coating operations is the layout from paper machine to coater to provide a smooth flow of paper with a minimum handling and equipment.

The second coater is called No. 3 because it serves No. 3 paper machine (there used to be a No. 2 paper machine). Raw stock from No. 3 machine is rewound and hoisted to the mezzanine floor by a 4-ton crane. One man on the mezzanine operates the crane, weighs the base rolls, supplies base rolls to the coater on a Barrett Guide-O-Matic truck and also supplies both supercalenders.

No. 3 paper machine has a crew of five plus four men on the mezzanine serving the coater. No. 1 machine and coater has a crew totaling eight men.

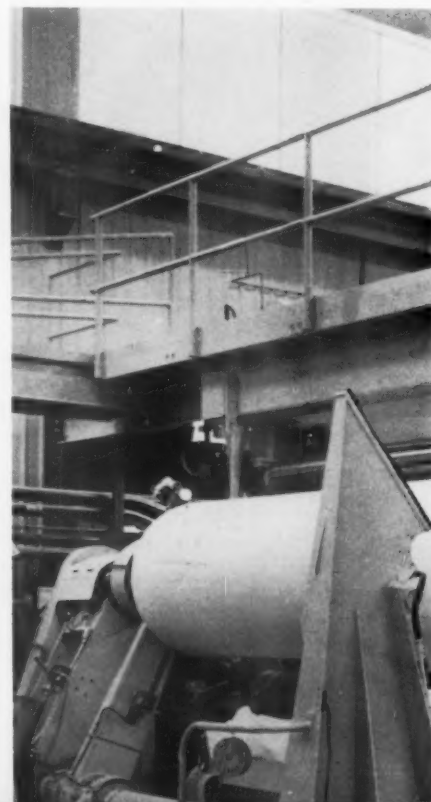
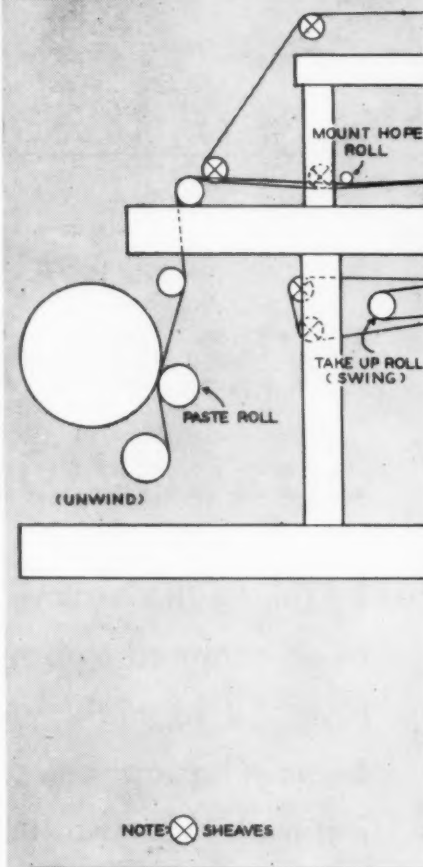
**High speed splicing equipment** has been developed by Blandin. They are able to splice at speeds exceeding 2,000 fpm. Key to this high speed splicing is a General Electric drive system which powers and automatically controls the unwind stand and six other sections of the coater. The special design of the flying splicer and reel allows all operations at the changing end to take place at full coating speeds.

A high degree of automatic control is attained by the incorporation of individual GE drive systems including separate generators and dc motors in each section. As the paper is coated and dried, it tends to alternately stretch and shrink. The drive compensates with the proper speeds and tensions that will maintain a consistent high grade product.

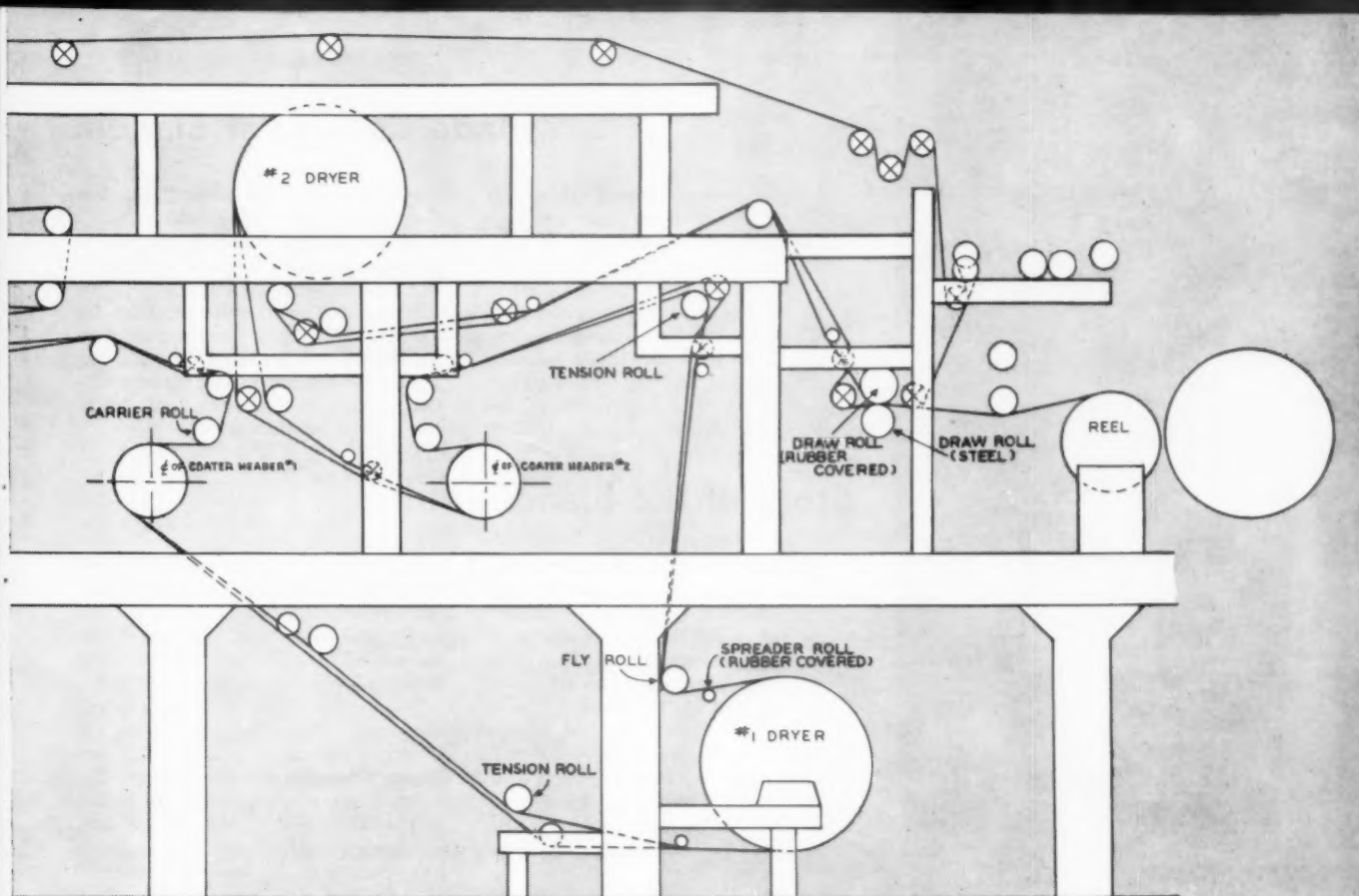
A GE tensiometer automatically transmits electrical signals that hold tension at a pre-set level. George W. Goetz, vice president and chief engineer, says, "Since installation there has been a minimum of downtime due to drive equipment."

As splice interval nears, an operator pushes a button that triggers the splice sequence. A photoelectric impulse from the core of the new roll automatically signals the paster to secure the splice. A guillotine then severs the expired roll, leaving only inches of scrap.

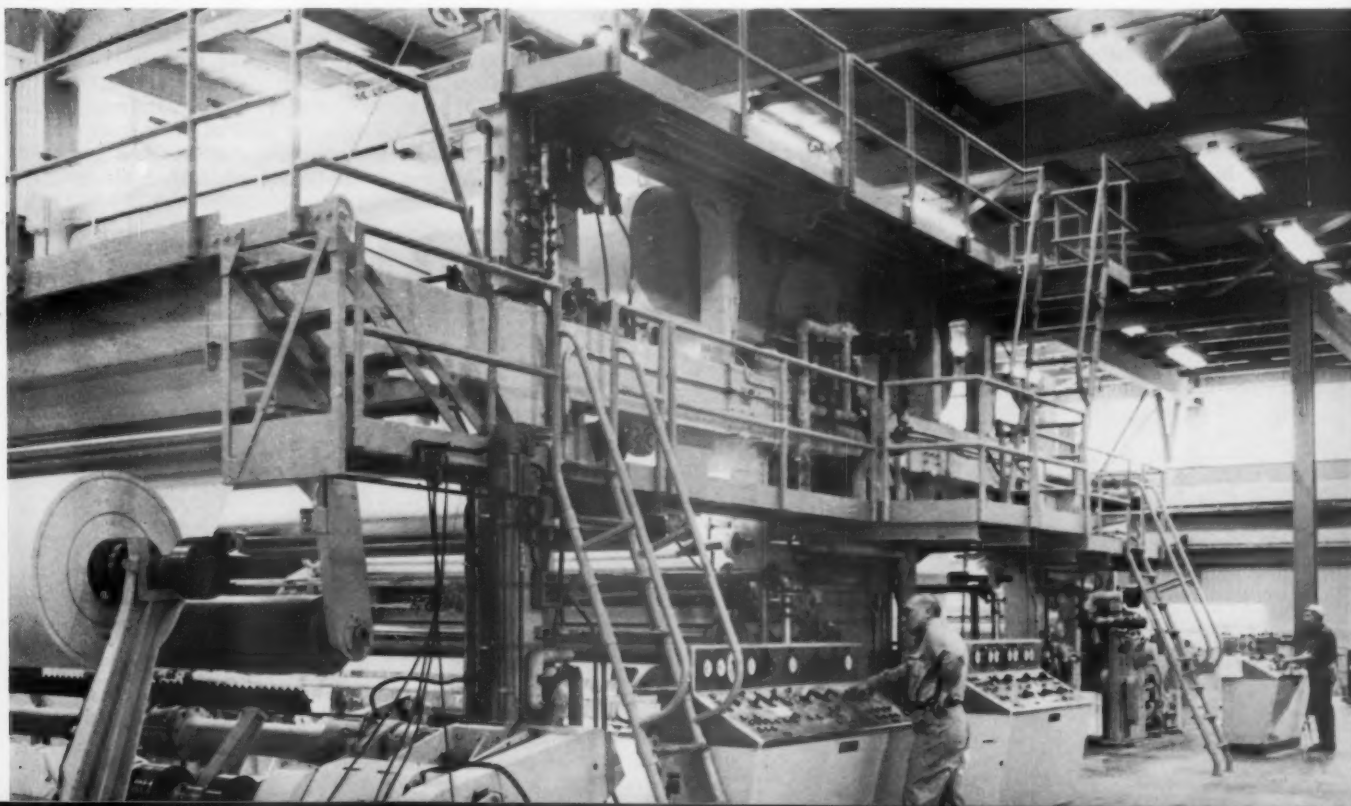
**Biggest problem to be solved** was how to make a suitable light-

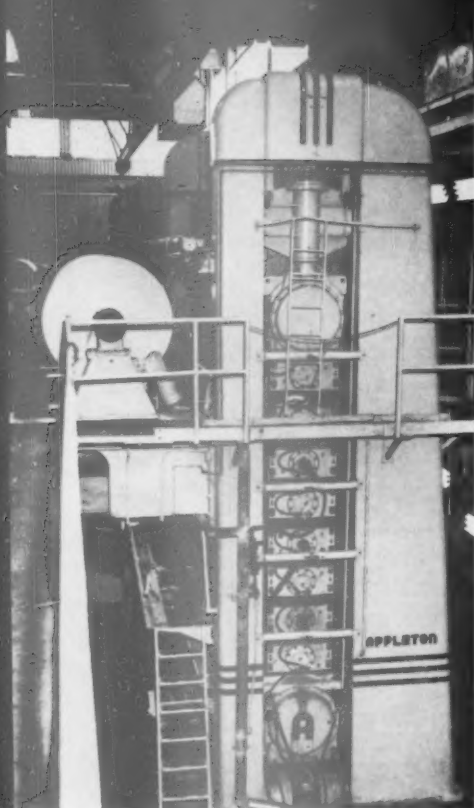






WEB TRAVEL ARRANGEMENT (above) on Blandin's second trailing blade coater. Note positioning of paper guide rolls and Mount Hope expander rolls. This second coater (below) is 150-in. wide and has many features based on Blandin's experience with its first trailing blade coater. These include Rice Barton Gardner high velocity dryers and a complex arrangement of electric drives and tensionmeters.





TWIN SUPERCALENDERS HAVE SUPERING speed of 1,200 fpm. Made by Appleton Machine Co., they are 148-in. wide and are served from mezzanine. Each is a 10-roll stack.

weight (28 lb.) base sheet. Other problems in order of their importance were threading operations; sealing the end dams; and the flying paster makeup.

The base sheet comes to the coater with 5% moisture content. Blandin uses 16 lbs. of starch to 100 lbs. of clay on the top side of the sheet, and 19% starch on the wire side. The only additive is a plasticizer.

Blandin does not double coat. They believe there is no advantage in double coating and with a trailing blade coater, it is not necessary. Coating blades are .012 in. steel. Blade life varies considerably depending upon coating speed, grade weight and amount of coating applied. Blandin coats 40 lb., 43 lb., 45 lb. and 50 lb., adding 12 lbs. of coating in each case. Coating speeds are consistently 2,000 fpm.

From the coater the rolls of coated paper move to twin Appleton supercalenders which are also served from the mezzanine. Each has a 10-roll stack, is 148 in. wide and has a supering speed of 1,200 fpm. On each supercalender, the bottom roll is the only one powered. A Gardner 75° glossmeter located just before the winder, records gloss of the sheet.

## ... Blade Coating at Blandin

After supercalendering the rolls move to the rewinder and are then trimmed to size for shipping.

Blandin believes it has the answer, at least for its own coating needs. C. A. Blaine, coating supervisor, says he would hesitate to advise other companies what they should do because each company has its own peculiar requirements. The big question, he says, is not, should you use a trailing

blade coater or roll coater, etc., but should it be on-or off-machine.

Blandin's latest move is further expansion of production and coating. It has announced plans for a new paper machine and pending further work on its 40 in. wide experimental Rice Barton trailing blade coater, which is designed for coating speeds up to 4,000 fpm, plans a third trailing blade coater, still off-the-machine.

## Story of the Blandin Mill

February 19, 1902 marked the beginning of production at what is now the Blandin mill. On that date the first paper rolled off the one machine at the rate of about 25 tpd. That was the approximate production when, in 1916, the late C. K. Blandin, (who died in 1958), then a St. Paul, Minn., newspaper publisher, bought the mill to supply the St. Paul Dispatch and Pioneer Press with newsprint during a period when World War I increased the demand for daily papers by leaps and bounds.

Mr. Blandin's original idea was to sell the mill when newsprint again became plentiful, but he became interested in Grand Rapids, Minn., and its people. He decided to keep the mill and speeded up No. 1 machine to increase production and in 1923 added a second small machine to be able to produce the increasing paper needs of his St. Paul newspapers.

In 1927 he sold the newspapers but retained the paper mill and began planning more improvements and

more production. Between 1930 and 1932 the small machine which had been installed in 1923 was removed and a new high-speed machine (now known as No. 3) was installed. This doubled former capacity to 150 tpd.

The new machine was much larger than the one removed and required a substantial addition to house the machine. The need for an addition developed into a rebuilding of the entire mill building and resulted in the first windowless paper mill. The windowless feature made for better control of light and air conditions and thus improved working conditions.

The next first at Blandin was the pioneering of the trailing blade coater. This machine had been developed to the pilot plant stage for coating one side, but the Blandin mill was the first to install a commercial size, using the trailing blade method for coating two sides—and without the benefit of pilot plant operation. A second and larger coater was installed early in 1959.

CENTRALIZED ELECTRICAL CONTROL PANEL for complete electric drive and automatic tensioning control. Keeping an eye on the instruments is Herb Mertz, coating technologist.



# Competition . . . and its effect on market pulp

By James L. Ritchie  
Executive Director  
U.S. Pulp Producers Assn.

Average operating rates for 1960 were higher in the domestic pulp and paper industry than in most segments of the American industrial economy, average profits were lower. Why? The answer is competition. Two factors influence the relative intensity of competition: (1) Changes in balance of supply and requirements. (2) Changes in basic pattern of production or trade. This is how they affected the industry this year . . .

## Supply and Requirements

**Paper and Paperboard**—U.S. paper and paperboard production in 1960 exceeded production in 1959 by 1%. This compared with a relative increase of 10% in 1959. Production gains in 1961 are expected to be modest. The Econometric Institute forecasts a gain of 2.6%, the BDSA, 2%, Dr. Louis Stevenson, 1%.

If we accept the most optimistic of these and relate it to the APPA's estimate of capacity in 1961, production of paper and paperboard will average 89% of capacity in the current year. This compares with 90% in 1960, and 92% in 1959.

Dr. Stevenson has ventured the prediction that paper and paperboard production in 1963 will be 8% above his forecasted level for 1961. Relating this projected 1963 demand to the preliminary estimate of 1963 capacity suggests an average operating rate of 90% in 1963—and an idle reserve capacity of 4½ million tons. New starts could lower this operating rate and raise the idle reserve capacity.

These supply/demand forecasts for 1963 accordingly promise no significant gain, over the next three years, in the average annual operating rate of domestic paper and board producers. If 10% of the paper industry's productive capacity is to remain idle on a continuing basis, this prospect should be taken into account in forward planning.

**Rayon and Acetate**—U.S. production of rayon and acetate, the major outlet for dissolving woodpulp, declined by 12% in 1960. Domestic production . . .

turn to p. 97



" . . . No serious challenge from within industry to its dominant position . . . "

GROUP 1 EXAMPLE—St. Regis, Pensacola, Fla., Kraft Center . . . physically integrated from pulp to conversion.



" . . . Expensive large scale research is unlikely substitute for (this mill) as incubator of new ideas . . . "

GROUP 2 EXAMPLE—Crocker Burbank & Co. Ass'n., Inc., Fitchburg, Mass. . . . relies on purchased pulp . . . its laboratory illustrates what Mr. Ritchie says this industry must never lose. . . .

" . . . Equipped to succeed in middle range of papers. . . . "

GROUP 3 EXAMPLE—W. C. Hamilton & Sons, Miquon, Pa. —relies on transfers of pulp from affiliated (Weyerhaeuser) mills.





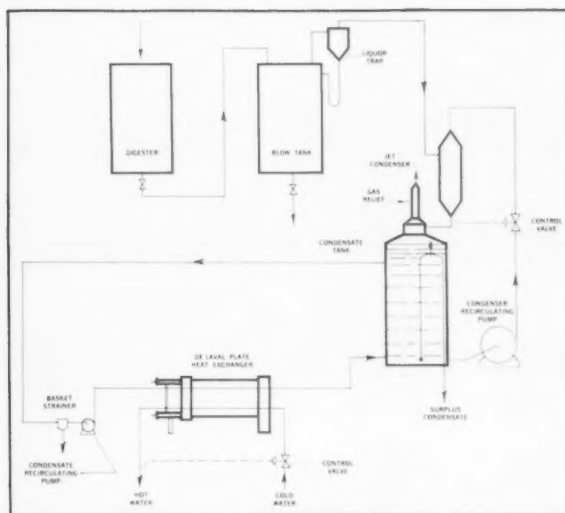
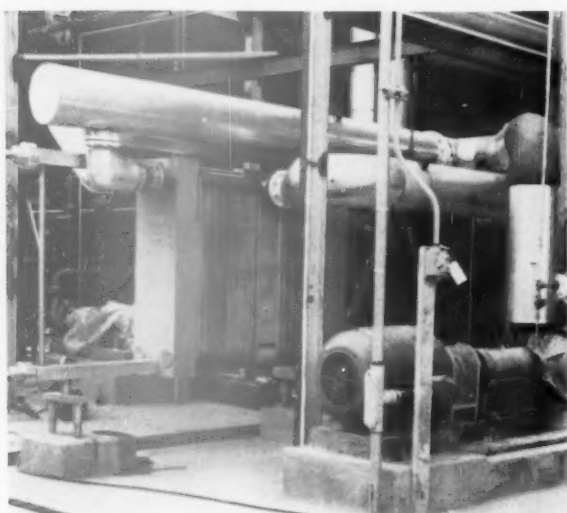


PLATE-TYPE HEAT EXCHANGER (left) is set in pulp digester blow steam recovery system (right). Unit cools 1090 gpm of condensate from 200 to 130°F and heats 1630 gpm of clean water from 110 to 160°F.

## Bowaters Saves 40 Million Btu/hr.

with use of plate-type heat exchangers at Carolina mill; continuous system has low initial cost, achieves desired heating and cooling

INSTALLATION of stainless steel plate-type heat exchangers enabled Bowaters Carolina Corp. to recover more than 40 million btu per hour at its Catawba, S.C., pulp mill. The plate heat exchangers, located in the pulp digester blow steam recovery system, paid for themselves in less than nine months.

Two features make this system attractive: Initial equipment cost is low, and both desired heating and cooling are effected. Because condensing of steam is continuous, rather than having to be done within 30 mins. every 4 hours as is normally the case, less condensing surface is required. Thus the installation can be smaller, keeping equipment cost down and helping to conserve space.

The system cools 1090 gallons per minute of dirty condensate from 200 to 130°F in the process of heating 1630 gpm of clean water from 110 to 160°F. Bowaters reports that it checked the performance of plate-type exchangers at other plants before ordering the unit for the Catawba mill. It installed two DeLaval model

R151-IB plate-type heat exchangers, each capable of heating 408,750 lbs. per hour of process water.

Both exchangers together recover more than 40,800,000 btu's for every hour of operation—the equivalent of approximately 40,000 lbs. of steam per hour. If the installation is only operated for 8 hours per day, 5 days per week, the savings in terms of average fuel cost alone comes to more than \$35,000 a year.

**The flow of the fluid streams** through the plate-type exchanger is very similar to flow in the plate-and-frame filter press. The plates in the exchanger are stacked. Hot and cold streams flow through alternate spaces between the plates.

The plates in the DeLaval units are corrugated, which causes turbulence that continuously breaks down any insulating stagnant film that tends to form on the plate surface. Corrugation also assures complete, even flow distribution. Overall heat transfer coefficient for a typical cooling application with a plate-type exchanger is normally in the range of 600-750 and

often over 900 btu per hour per sq. ft. per degree F.

The plate exchanger can be cleaned in place by counter-flow circulation of cleaning solution at 1½ times product flow. In-place cleaning is effective for the same reason that heat transfer coefficients are high—turbulence caused by corrugated plate design.

**One of the cost advantages** of the plate exchanger is in those cases where the function for which the exchanger was designed is changed and additional surface is required. Heat transfer surface can be increased in the plate unit by adding more plates. Upper limit for expansion of one of the typical standard plate exchangers now available is 1600 sq. ft., the heat transfer surface being 180 in. long, 33 in. wide and 73 in. high.

There are some limitations to plate exchangers. They cannot be used at pressures in excess of 150 psi nor at temperatures in excess of 300° F. Further, they cannot be used with true gases. However, for most pulp mill applications these do not represent serious limitations. ■



# HOW TO DO IT

## Problem: Increasing drying capacity with limited floor space

**Problem:** New York and Penn wanted to increase production of its No. 8 book paper machine. There was a choice of adding three drum dryers or installing a high velocity air dryer beneath an existing drum. Floor space was limited.

**Place:** Lock Haven, Pa.

**Solution:** The company decided to install a high velocity dryer because it could be installed without moving rewinders and other equipment, and because of cost.

After installation, production was increased about 25% as speeds increased from 400-425 fpm to 500-550 fpm. The dryer selected is a DL type made by J. O. Ross Engineering Div., Midland-Ross Corp.

This high velocity dryer is essentially a sheet-metal chamber that fits under or over and partially around a drum dryer. The dryer discharges air against the web through slots at velocities up to 15,000 cfm and at temperatures up to 315° F. The machine tender controls air velocities by adjusting dampers in six ducts which connect the main air supply header with the dryer.

The dryer is divided vertically into six separate compartments, each serviced by one of the six supply ducts. Different velocities can be maintained at different web locations if moisture content varies across the sheet. The tender controls temperature by means of an indicating temperature-controller that regulates the flow of steam through coils over which the high-velocity air is circulated.

The six independent dryer sections are each partitioned in two by horizontal dividers. Incoming air is ducted directly to the compartments next to the web and discharges through the slots in the duct. These slots run parallel with the width of the web. Return air is drawn into inlets between the air-supply slots and is piped to the outer compartments where it enters a second header and is returned to the Ross heater. The heater brings it back to operating



temperature and it is recirculated to the dryer.

The machinetender can drop the dryer out of position for threading by operating a pneumatic cylinder that hinges the unit downward several inches from the drum. The air heater and circulating fan are in the basement under the afterdryer, close to the high-velocity dryer. The high-velocity dryer is installed beneath the first drum dryer of the afterdryer section.

## Problem: Lowering pulpwood loading costs

**Problem:** Stepping up efficiency of pulpwood loading and unloading.

**Place:** Eleven pulpwood concentration yards in Virginia.

**Solution:** West Virginia Pulp and Paper Co. installed LP-gas lift trucks. One truck can transfer a truckload of wood to a railroad car in less than 6 mins. During a working day, one lift truck can unload about 100 truckloads of wood, filling approximately 10 railroad cars.

After operating the trucks the equivalent of 100,000 miles, Sam Woodson, manager of West Virginia's Kelly pulpwood yard near Lynchburg, says, "We found no evidence of engine wear. We have practically no downtime for maintenance other than to replace spark plugs once a year."

The lift trucks run an 8-hr. shift on 16 gals. of LP-gas. "Lubricating oil in the LP-gas engine stays clean three or four times longer, a substantial saving," adds Mr. Woodson.





## "Cross Section" of Industry Leaders

from pulp and paper's only graduate school

ONCE A YEAR, alumni of The Institute of Paper Chemistry, Appleton, Wis., have a get-together. Because the Institute is the chief training ground for this industry's executives, this picture of the 131 alumni and wives at the recent Paper Week reunion may have interest for many readers. Many prominent alumni are not pictured.

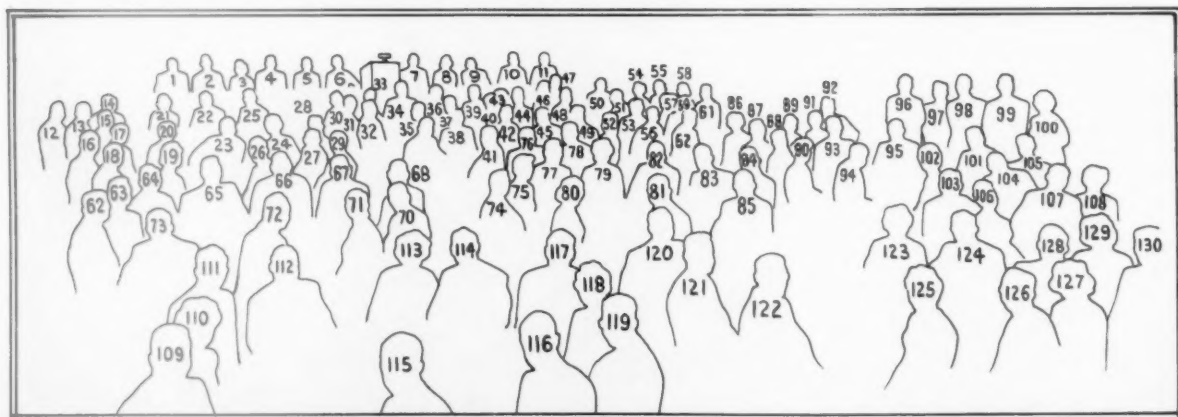
The Institute has some 250 grad-

uates, including many presidents, vice presidents, managers and superintendents, as well as technical and research directors or chief or plant engineers. The Institute reports its graduates divide about evenly between production and management and technical posts. It graduates more ph.d.'s in chemistry and chem. engineering than most state universities. Some years ago, over 40

graduates held top management positions—this number has certainly increased.

Ward Harrison, president of Allied Paper Corp., is alumni trustee on the Institute's governing board. One of the first graduates and first trustee on the board for the still-young Institute was Harold Bialkowsky, Weyerhaeuser research director.

FACES IN THE CROWD are identified in this specially prepared diagram





CODE NUMBERS (from diagram) give name and company affiliation of IPC alumni

- |  |  |  |
|--|--|--|
| 1 E. R. Laughlin, Institute of Paper Chemistry       | 44 L. A. Moss, Riegel Paper Corp.              | Power & Paper Corp.                            |
| 2 W. H. Hoge, Oxford Paper Co.                       | 45 A. P. Yundt, Bird & Son, Inc.               | 88 L. J. Gross, Vulcan Engineering Co.         |
| 3 Mrs. Harrison                                      | 46 Mrs. Forman                                 | 89 G. E. Sheets, Mead Corp.                    |
| 4 W. D. Harrison, Allied Paper Corp.                 | 47 L. V. Forman, Scott Paper Co.               | 90 Mrs. Gross                                  |
| 5 R. P. Whitney, Institute of Paper Chemistry        | 48 J. W. Bard, Marathon Div., American Can     | 91 Mrs. Sheets                                 |
| 6 P. E. Nethercut, TAPPI                             | 49 J. M. McEwen, Weyerhaeuser Co.              | 92 K. D. Hay, Asten-Hill Co.                   |
| 7 J. G. Strange, Institute of Paper Chemistry        | 50 H. P. Dixon, Fox River Paper Co.            | 93 R. B. Valley, Eastman Kodak Co.             |
| 8 Mrs. Nethercut                                     | 51 A. S. Ersparmer, Scott Paper Co.            | 94 J. S. Hayes, Black Clawson Co.              |
| 9 H. F. Lewis, Institute of Paper Chemistry          | 52 Mrs. McEwen                                 | 95 Will Wink, Institute of Paper Chemistry     |
| 10 F. W. Brainerd, Scott Paper Co.                   | 53 W. H. Aiken, Union Bag-Camp Paper Corp.     | 96 R. W. Hisey, S. D. Warren Co.               |
| 11 M. L. Downs, Thilmany Pulp and Paper Co.          | 54 Mrs. Baker                                  | 97 D. S. Most, Information Technology Labs     |
| 12 H. W. Bialkowski, Weyerhaeuser Co.                | 55 L. E. Simerl, Olin Mathieson Chemical Corp. | 98 E. T. Turner, Weston Paper and Mfg. Co.     |
| 13 W. F. Holzer, Crown Zellerbach Corp.              | 56 Mrs. Aiken                                  | 99 D. L. Gray, Bowaters Carolina Corp.         |
| 14 R. G. McCarron, Morningstar, Paisley, Inc.        | 57 Mrs. Dixon                                  | 100 Mrs. Hisey                                 |
| 15 E. O. Bryant, Olin Mathieson Chemical             | 58 Mrs. Simerl                                 | 101 W. M. Van Horn, Ins. of Paper Chemistry    |
| 16 J. K. Appledorn, Esso Research & Eng. Co.         | 59 A. H. Graef, Weyerhaeuser Co.               | 102 Mrs. Hayes                                 |
| 17 W. J. Bublit, Minnesota Mining & Mfg.             | 60 W. A. Schenck, Riegel Paper Corp.           | 103 W. Z. Walters, Great Northern Paper Co.    |
| 18 G. E. Martin, Champion Paper and Fibre            | 61 R. E. Baker, Southwest Forest Industries    | 104 V. N. deFelice, St. Croix Paper Co.        |
| 19 Mrs. Haug   | 62 G. C. Inskeep, St. Regis Paper Co.          | 105 D. C. Lea, Olin Mathieson Chemical Corp.   |
| 20 Mrs. Bublit                                       | 63 H. Ward Verseput, Continental Can Co.       | 106 Mrs. Walters                               |
| 21 Mrs. Clark  | 64 P. E. Trout, Waldorf Paper Products Corp.   | 107 W. O. Kroeschell, Michigan Carton Co.      |
| 22 J. E. Foote, Diamond National Corp.               | 65 K. M. Grasse, Howard Paper Mills            | 108 Mrs. Kroeschell                            |
| 23 C. R. Calkins, Riegel Paper Corp.                 | 66 J. J. Higgins, Packaging Corp. of America   | 109 C. W. Carroll, Int'l Business Machines     |
| 24 Mrs. Moore  | 67 R. V. Parkison, Spencer Chemical Co.        | 110 Mrs. Carroll                               |
| 25 J. d'A Clark, Oregon State College                | 68 T. G. Zentner, Olin Mathieson Chemical      | 111 J. T. Henderson, Crown Zellerbach Corp.    |
| 26 A. J. Haug, Scott Paper Co.                       | 69 B. B. Thomas, Rayonier Inc.                 | 112 E. Thode, Institute of Paper Chemistry     |
| 27 Mrs. Calkins                                      | 70 D. E. Kane, National Vulcanized Fibre Co.   | 113 Mrs. Friend                                |
| 28 S. T. Moore, R. T. Vanderbilt Co.                 | 71 Mrs. Boehm                                  | 114 W. H. Friend, Personal Products Corp.      |
| 29 J. A. Van den Akker, Institute of Paper Chemistry | 72 R. L. Boehm, Mead Corp.                     | 115 R. B. Estridge, Albemarle Paper Mfg. Co.   |
| 30 J. C. Wollwage, Kimberly-Clark Corp.              | 73 E. H. Shriver, Mead Corp.                   | 116 R. C. Erickson, Albemarle Paper Mfg. Co.   |
| 31 Mrs. Boggess, Beveridge Paper Co.                 | 74 J. G. Leech, West Virginia Pulp & Paper     | 117 H. D. Wilder, Institute of Paper Chemistry |
| 32 W. D. Boggess, Beveridge Paper Co.                | 75 Mrs. Carlson                                | 118 Mrs. Faber                                 |
| 33 Mrs. Weidner                                      | 76 P. J. Trucano, Federal Paper Board Co.      | 119 H. B. Faber, Jr., Eaton Dikeman Co.        |
| 34 J. P. Weidner, Container Corp. of America         | 77 W. E. Carlson, St. Regis Paper Co.          | 120 J. Swanson, Institute of Paper Chemistry   |
| 35 Mrs. Wollwage                                     | 78 J. W. Shimp, Scott Paper Co.                | 121 T. P. Czepiel, Scott Paper Co.             |
| 36 Mrs. Bixler                                       | 79 Mrs. Wethern                                | 122 D. E. Marth, Federal Paper Board Co.       |
| 37 C. W. Cassell, M. W. Kellogg Co.                  | 80 Mrs. Keeney                                 | 123 Mrs. Kallmes                               |
| 38 P. E. Shick, Owens Illinois Glass Co.             | 81 F. C. Keeney, Knowlton Brothers Co.         | 124 O. J. Kallmes, St. Regis Paper Co.         |
| 39 A. L. Bixler, Hamilton Paper Co.                  | 82 J. D. Wethern, Riegel Paper Corp.           | 125 Mrs. Marth                                 |
| 40 Mrs. Cassell                                      | 83 J. P. Daneman, Union Carbide Chemical       | 126 L. F. McDonnell, Scott Paper Co.           |
| 41 J. J. Yirak, Union Bag-Camp Paper Corp.           | 84 Wendall Smith, Inst. of Paper Chemistry     | 127 Mrs. McDonnell                             |
| 42 J. S. Barton, Crown Zellerbach Corp.              | 85 Richard Roberts, Marathon, American Can     | 128 R. A. Somsen, Container Corp. of America   |
| 43 Mrs. Moss   | 86 Mrs. Schenck                                | 129 William Holtzman, Glidden Co.              |
|  | 87 G. W. Mead, II, Consolidated Water          | 130 Mrs. Holtzman                              |

# RCA introduces a cost-saving new Electronic Paper Inspection System

for detecting creases, calender cuts, holes, spots and gloss imperfections

At least ten times faster than visual inspection, this new electronic equipment was developed by RCA to meet a need for automatically detecting and classifying imperfections in paper. Here is a quality control device which permits higher inspection speeds than ever before possible, with more consistent results, for maximum economy.

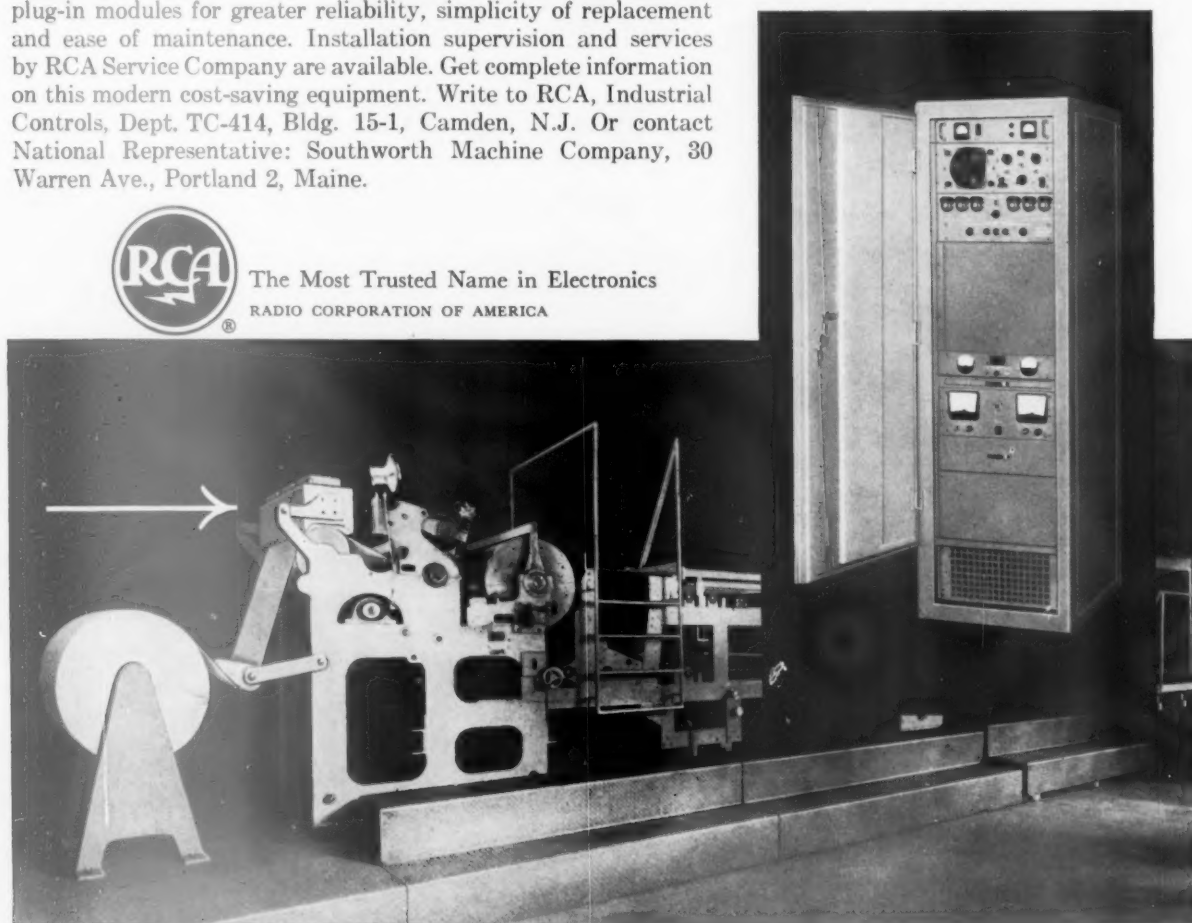
The surface of the paper is continuously monitored as it passes over a roller at linear speeds up to 1000 feet per minute. In this manner, creases, calender cuts, holes, spots, gloss imperfections, etc. are detected and the paper may be classified in such categories as "Accepts" and "Rejects," or "Firsts," "Seconds," and "Rejects," depending upon customer requirements.

This RCA equipment is completely transistorized and employs plug-in modules for greater reliability, simplicity of replacement and ease of maintenance. Installation supervision and services by RCA Service Company are available. Get complete information on this modern cost-saving equipment. Write to RCA, Industrial Controls, Dept. TC-414, Bldg. 15-1, Camden, N.J. Or contact National Representative: Southworth Machine Company, 30 Warren Ave., Portland 2, Maine.



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- All controls mounted in one rack.
- At least 10 times faster than visual inspection —and far more consistent.
- Drift-free inspection standard.
- Only one head required for checking all types of defects.
- Non contact type inspection.
- Equipped with built-in lamp burn-out alarm system and test signal generator for checking performance of each channel at all times.



RCA Electronic Paper Inspection System installed before the cutter, and on a Maxson Sheet Handling Apparatus. Inspection head is indicated by arrow at left, control rack is shown at right. NOTE: Only one inspection head and one control rack are needed for detecting all types of defects. Control rack can be located remotely from inspection head.



FOR INFORMATION ON THIS OPTICAL PAPER INSPECTION SYSTEM WRITE

# **SOUTHWORTH MACHINE CO.**

RCA NATIONAL REPRESENTATIVE, 284 WARREN AVENUE, PORTLAND, MAINE

The appointment by RCA as national representative for its Optical Paper Inspection Equipment marks another step in Southworth's objective of providing paper mill management with a comprehensive service aimed at cost reduction.

As you will read in RCA's story on the opposite page, this new equipment brings to the vital finishing room operation of inspection a speed and an accuracy heretofore unavailable because of human limitations and fallibility.

How you might incorporate RCA Optical Paper Inspection Equipment as part of a more efficient and completely integrated Southworth finishing room System is still another reason for considering an early Southworth study of your particular plant problems and requirements.

Paper Conditioners; Automatic Carton Sealer; Lift Tables; Air-Lift Tables; Cutters; Deliveries; Layboys; Skid Turners; Hand, Foot, Motor Driven Punching Machines; Humidifiers; Envelope Presses; Punch Heads; Tabbing Knives; Corner Cutters; Custom Built Allied Equipment.





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treated stocks, there's TITANOX-RA-50, rutile  $\text{TiO}_2$ . Regardless of which you choose, you can count on receiving the easy working qualities and uniformity of all properties for which all TITANOX pigments are noted.

For the type of TITANOX best suited to meet your pigmentation requirements, we cordially invite you to consult our Technical Service Department. Titanium Pigment Corporation, 111 Broadway, New York 6, N.Y.; offices and warehouses in principal cities. In Canada: Canadian Titanium Pigments, Ltd., Montreal.

**TITANIUM PIGMENT CORPORATION**  
SUBSIDIARY OF NATIONAL LEAD COMPANY





1

Data  
Gathering



2

Establishing  
Specifications



3

Laying Out  
the System



4

Preparing the  
Proposal and  
Cost Estimate



5

Detailed Engineering  
and Supervision of  
Manufacture



6

Supporting  
Services

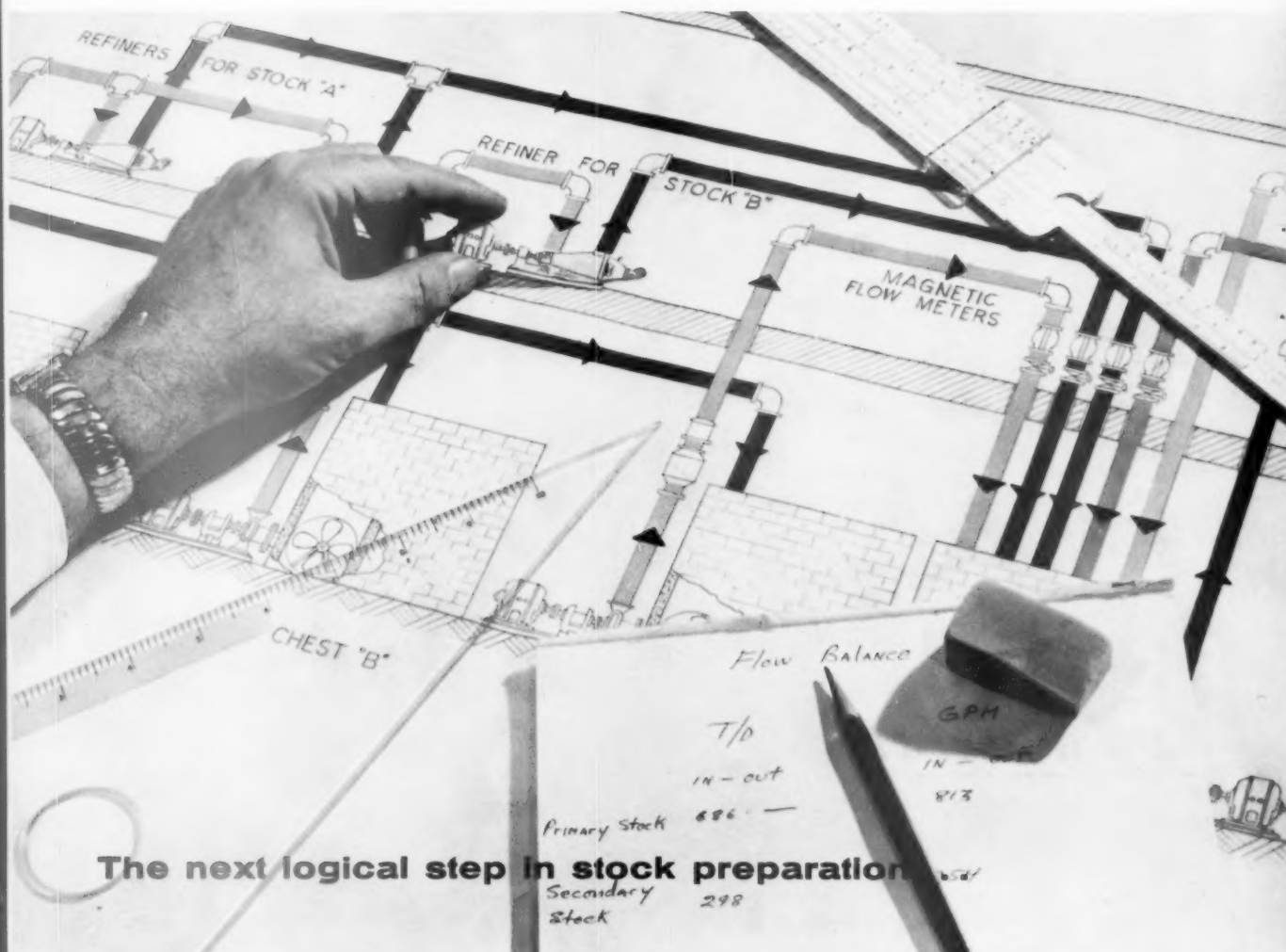
Step by step, Jones relies on a combination of thorough planning, competent engineering, and teamwork to design and produce stock preparation systems that meet the highest standards of performance and dependability.



7

Training Mill  
Personnel and  
Start-Up of System

# THE INTEGRATED STOCK PREPARATION SYSTEM



## The next logical step in stock preparation

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**FASTER PROJECT IMPLEMENTATION,** resulting in earlier start-up.

**LOW EQUIPMENT COSTS,** because major components are selected from the wide range of regularly manufactured Jones equipment — all competitively priced.

**LOWER OPERATING COSTS,** because of efficient, carefully matched, easy-to-maintain components.

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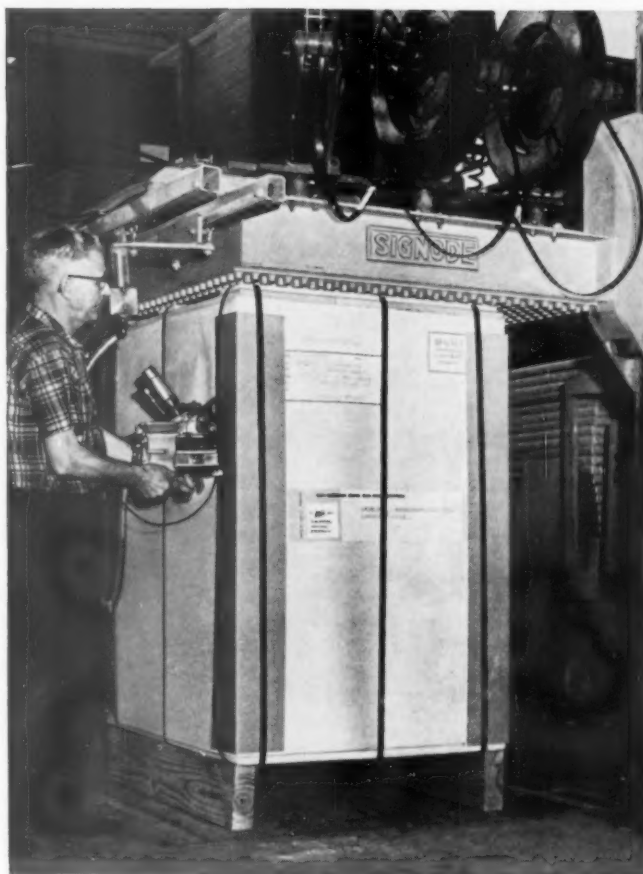
# Jones

PULP MILL EQUIPMENT AND  
STOCK PREPARATION MACHINERY



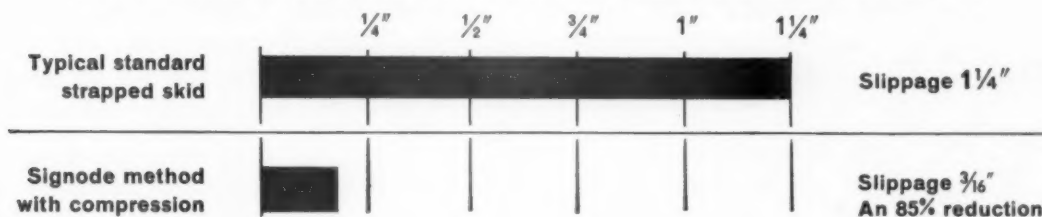
# **Compression strapping the Signode way reduces paper slippage 85%**

This skid of paper is being strapped on a new Signode CS20-1 press which compresses the load while the worker applies steel strapping with a fast new Signode power tensioner-sealer tool. The paper will arrive at destination in top condition. The mill has improved its product, yet reduced its costs per skid for time and materials!



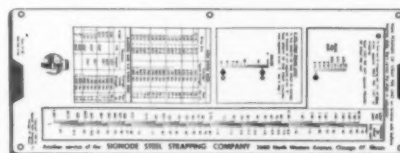
## **Here's Proof!**

### **PAPER SLIPPAGE, STRAPPED PAPER SKIDS, AFTER 5 IMPACTS**



Write today for all the facts on this important new development from Signode.

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You can count the savings hour by hour as a Cat wheel loader takes over unloading, sorting, decking or feeding. One dependable machine, one operator, and your yard operation is simpler, faster, more profitable.

The largest plywood manufacturer in Montana, the Van-Evan Company, put a 966 Traxcavator in the yard of their new mill at Missoula. Van-Evan handles several types of timber. Logs are decked by species, length and diameter . . . 24 decks in all, and the 966 does the sorting and decking in a yard that's a half-mile long and just as wide. When needed, the big Traxcavator also helps unload incoming trucks and feeds the mill.

The Cat loader has the features for fast work around a mill. As Van-Evan yard foreman Norman Herriot pointed out, "Our 966 looks good in this sorting and decking operation because of its speed—the power shift transmission lets the operator move into a pile, reverse and take off in a hurry with a big load, and it's all done with finger-touch moves; the Traxcavator gives you better visibility than most loaders, and with the lift arms and hydraulics up front, the operator can get in and out fast. And he's safer!"

Besides the finger-touch power shift transmission and wide-open design that Mr. Herriot mentioned, there's the

power-boosted steering and dual brakes, automatic fork positioner and turbocharged Cat Diesel Engine that uses inexpensive No. 2 furnace oil.

To learn more about these new Traxcavators, and to find out, specifically, how they can cut costs at *your* mill—see your Caterpillar Dealer.

### **CHECK THESE MONEY-SAVING FEATURES OF THE WHEEL TRAXCAVATOR LINE**

966—140 HP; 944—105 HP; 922—80 HP (all flywheel ratings)

**All Traxcavators feature Cat Diesel Engines** (optional gasoline engines on the smaller two)—Cat power shift transmission for fast, finger-touch operation in first, second, and forward-reverse—live-action hydraulics that put power and speed to the forks, never slow the drive train—many attachments that fit out Traxcavators for the side-chores around a mill or in the woods: buckets, bulldozers, winches, snow plows, etc.

Caterpillar Tractor Co., General Offices, Peoria, Ill., U.S.A.

## **CATERPILLAR**

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# Seek Extremes in Density

in breeding new types of trees for future, suggests forest geneticist, who faces problem of obtaining numerous other desired properties

By DR. JOHN W. DUFFIELD  
Technical Dir., Col. W. B. Greeley  
Nursery, Industrial Forestry Assn.

—Nisqually, Wash.

TO THE TREE IMPROVER thinking about wood quality, one of the most prominent aspects of our timber-using industry is the high degree to which it is integrated. As foresters, we can be proud of this, even though it may make things a bit complex for the tree improver. The same tree may be used to produce veneer, lumber, and pulp chips, to name only the principal uses. Each of these used may require wood of somewhat different basic properties.

**A tree grower needs limits** within which he can work. Integrated utilization is mentioned, along with the problems it represents, simply to establish those limits. With these lim-

its in mind it would appear that there are three ways in which a tree improver can look at high density of wood as a desirable character for new types of trees. These alternatives are:

(1) Since high density is both a plus and minus characteristic, depending upon the end product, he can disregard it. This idea is attractive to the tree breeder for one very simple reason. Each property that the tree breeder attempts to improve does not simply add to the job, it multiplies the job. If, for example, the tree breeder decides to select only the fastest growing tree in each thousand, and to select for high density at the same rate, he is at once looking for one tree in a million. It is easy to see that specified property comes at a greatly increased cost. Therefore, the tree breeder should be very certain a given property is of general importance before he adds it to his list of specifications.

(2) An alternative to disregarding density is to merely discard as parents trees that are extremely high or low in this respect. Since trees near the average in any characteristic are much more common than trees representing the extremes, this procedure does not limit the progress toward other objectives nearly as drastically as would the specification that parents should rate near one extreme or the other in density. This procedure at first, does not seem to differ too much from the first, i.e., simply to disregard density. It does offer, however, this advantage: it should tend toward the production of forests more uniform in wood density and hence a bit more predictable from the manufacturer's point of view. Density variations within a stand are what makes it possible for the trees to stand up economically.

(3) Finally—and this scheme ap-

## Seed Orchards Pushed by Duffield

Dr. Duffield is in charge of the Industrial Forestry Association's program to improve the commercial tree species of the Douglas fir region of the Pacific Northwest. Prior to joining IFA several years ago, he taught forest genetics at the College of Forestry at the University of Washington in Seattle. He was previously on the staff of the Institute of Forest Genetics at Placerville, Calif. He is an associate editor of the Journal of Forestry. Dr. Duffield has been working closely with all segments of the forestry profession in recent years in the establishment of seed orchards in the Douglas fir region to help build up a dependable and perpetual supply of seed for nursery stock and for aerial seeding. Most of the large land-owning forest industries companies in this area have now embarked on seed orchard projects. Previously the emphasis was on the raising of Douglas fir seedlings at the Col. W. B. Greeley Nursery at Nisqually. Now the IFA genetics program has been expanded to give greater attention to western hemlock, Sitka spruce and other species of importance to the pulp and paper industry. The article presented here is adapted from a paper presented by Dr. Duffield at the recent Washington State Forestry Conference.



A GRAFT OF SCION WOOD onto root stock in research center of Col. W. B. Greeley Nursery is examined by the author, Dr. Duffield. This graft is western hemlock, which in recent years has been getting increased attention.

## ... breeding for high and low density



CHARACTERISTICS INHERITED BY SLASH PINE in South include short, stubby branches (tree at left) and long branches at acute angles (right). Tree breeders face problem of attempting to obtain the desired wood density in addition to such tree properties as rapid growth, straightness, good form. (USFS photo)

peals to the writer for several reasons—we might attempt to develop new types with wood at both extremes of the range of density. First, it seems to recognize the realities of our industry, with its increasingly diversified and specific requirements for wood properties. Second, it promises to advance our understanding of the relationships between density and other properties of wood. It will, of course, involve more work than if we were to decide on either of the first two alternatives. It will also complicate the decisions of the forest manager, but perhaps it is too early to worry about this until we have seedlings in the nursery.

**An advantage for wood researchers** would result if they had the opportunity to work with dense and light wood of the same species, and this is an important—and interesting—point for the geneticist to consider. At present, the wood researcher can find light or heavy wood by selecting it from the appropriate part of the tree, or from appropriate stands. In such

cases, however, he cannot be certain that the strength or pulping properties which he relates to density are not themselves affected by the environmental factors affecting density.

A simple example of our ignorance of wood property relationships is furnished by tracheid length and wood density. Both tend to increase from the pith outward and from the top to the butt. So, we find these properties closely correlated. What we do not know is whether they are necessarily related to each other, or both related to the same gradients in the tree stem. Having trees with inherently light and heavy wood to compare would shed light on this problem, which is of great interest to the pulp and paper industry, because the burst strength and tear strength are affected in opposite directions by density and tracheid length. Whether or not tree improvement or genetics can do much in the way of producing super trees, at least we can help in wood research.

**"Heritability" of wood density** is a factor which geneticists are ex-

ploring in their search for improved trees. Whether we are talking about wood density or any other property of a tree, one of the questions the tree breeder encounters is, "Is this property inherited and caused by genes, or is it caused by environment?"

This is of course a very fundamental and almost elementary question in biology. In general, the answer is not very simple. There is no important property of a tree, or person, or any other plant or animal of which we can say, flatly, "This is inherited, or this is entirely influenced by the environment." The real question is, what are the proportions of effect of heredity and of environment on this characteristic? These proportions are expressed in a term used by geneticists, a term called "heritability," which is simply the percentage of the variation in the property, which we can attribute to heredity. The rest of the variation is attributed to environment.

The question is where the heritability of wood density falls. We don't have very much evidence on this because you have to estimate or measure heritability. You have to grow progenies, following controlled pollinations, under controlled conditions, and we haven't had very much time to do this type of research. There have been, however, some studies (e.g., one in Australia on Monterey pine by Eric Dadswell and another study on loblolly pine by Bruce Zobel, who is working at North Carolina State College) which showed that heritability for density is in the neighborhood of 20 to 30%. It doesn't pay to put a very precise value on these figures, but suffice to say that heritability of as little as 20% is enough for a plant breeder to take hold of, and modify the particular property. Beginning with this basic assumption, there is something that you can do about wood density by applying conventional plant breeding methods. ■



INDUSTRIAL FORESTER John Bosshart grafts selected scion onto established root stock in St. Regis Paper Co.'s seed orchard at Kapowsin, Wash.



# Now in Sight: Goal of All-out Mechanization

Pulpwood experts cover many different approaches to problem of streamlining logging operations in race against costs and waste

—Montreal  
TOTAL MECHANIZATION of pulpwood operations is the ultimate objective of Canadian International Paper Co., I. F. Fogh told delegates to the annual meeting of the Woodlands Section, Canadian Pulp & Paper Association in Montreal. This intention was echoed by other speakers.

The sessions, March 21-23, drew more than 1,000 from Eastern Canada and the U.S.

A. Harold Burk, vice pres. and woods mgr., the KVP Co. of Espanola, Ltd., a Toronto University forestry graduate who saw service with Abitibi, Great Lakes and other companies before joining his present engagement, was elected chairman of the section, succeeding F. A. Harrison of CIP.

In emphasizing the growing importance of machines in Canada's pulpwood industry, Mr. Fogh, long one of CIP's key men in the woodlands division, said the problem of total mechanization must be tackled at once as a perfectly normal defensive action in order to maintain relative competitive position.

**"The goal can't be reached overnight,"** said Mr. Fogh. "The problem is immense, mistakes are costly and we must make haste slowly but deliberately. We believe that the principle of a continuous, integrated, high-speed operation applied to the work of harvesting pulpwood will, eventually and inevitably, be applicable over a wide range of conditions in the forest."

Mr. Fogh described a new piece of equipment developed by CIP for pulpwood harvesting. In its present form it will de-branch, de-bark and cut to pre-determined length "at a pretty fair and continuous rate of operation."

"You may wonder why the machine doesn't run around in the forest, snipping off trees and spitting them out behind neatly tied up in pre-cut bundles," said Mr. Fogh. "Who knows,

maybe it will some day, but for the time being let's concentrate our attention on the speed and continuity of the processing operation. Herein lies the clue, and it is precisely in this respect that this piece of crude prototype equipment differs from the only other kind of wood harvesting machinery as yet unveiled."

The first precise estimate of the full extent to which machines have in recent years revolutionized pulpwood harvesting throughout Western Canada was given by A. Koreleff, Russian-born Canadian forestry consultant. He said that in the 1949-50 season, mechanical work in the limit operations of the industry in Eastern Canada totalled 65 million horsepower-days, but that for 1959-60 the respective figure was about 185 million.

**Spending for woods machinery** in 1949-50 was nearly \$23 million, reported Mr. Koreleff; in the latter period, 1959-60, it rose close to \$78 million. The mechanical manual work ratio rose during the nine-year period from 5.9, horsepower-days per man day to 26.5 horsepower-days per man day. Mechanical work cost increased from 17.6 to 43.2%.

These figures were cited to show the use of a common measuring stick—horsepower-days—to appraise the performance of whole fleets of machines engaged in pulpwood logging. Until now, according to Mr. Koreleff, such collective power appraisal had not been regarded as feasible. He pointed out that logging is the use of power to cut timber and bring it out. With man-and-horse logging, these two power sources could be summed up for the whole operation and assessed. In large-scale mechanized logging this clarity was somewhat diminished, but the new yardstick should help throw more light on the efficiencies of collective work of logging machinery.

Here are some abstracts of papers

presented by other speakers;

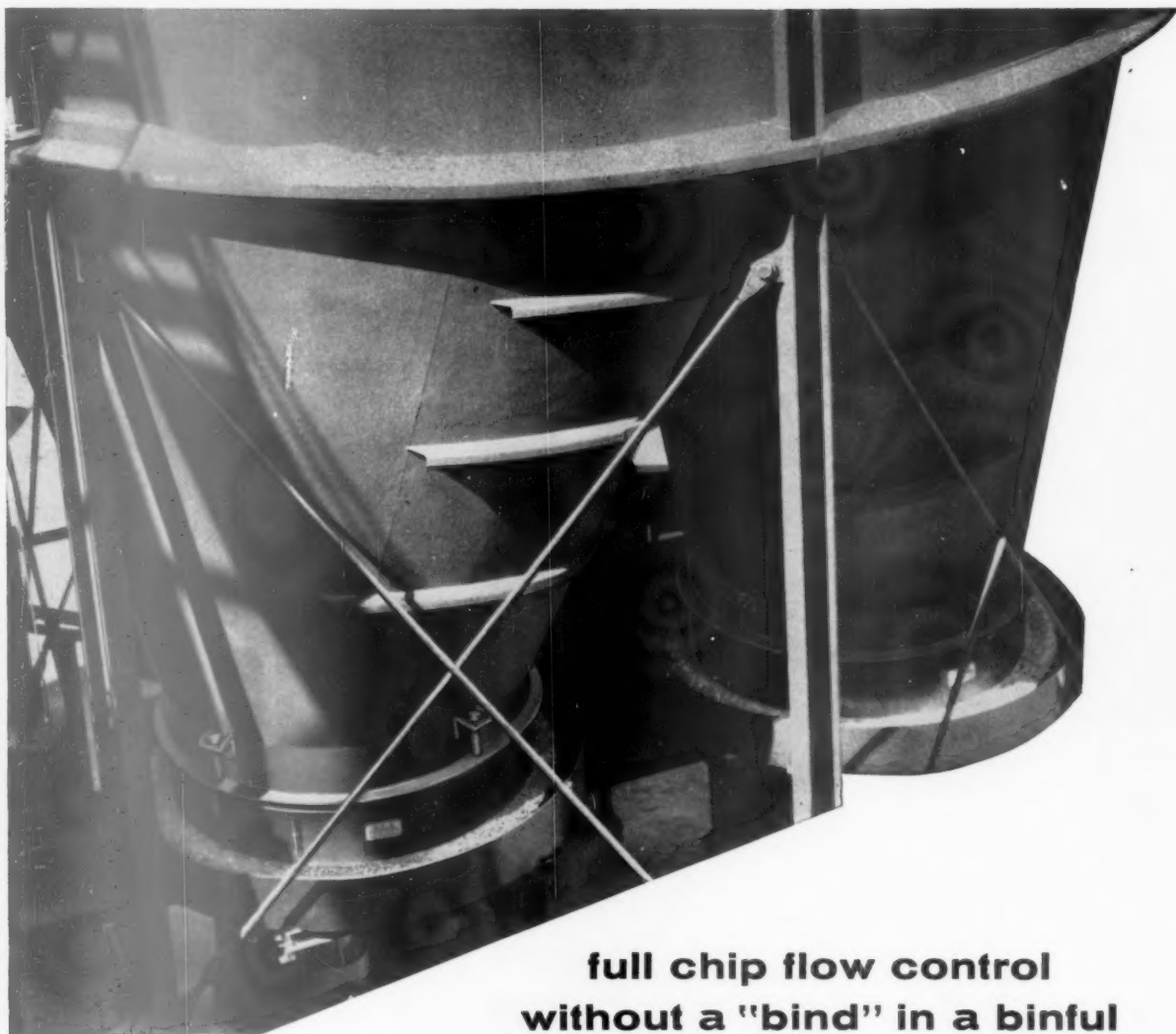
**F. M. Buckingham, University of Toronto:** Timber cruising to measure the exact amount of wood in a forest before cutting may further streamline the pulpwood harvest. Pre-cut scaling is already common in Saskatchewan, and is being used on a small scale in Alberta, with a research project under way in Ontario. Pre-cut scaling avoids subsequent costly measurement.

**Prof. L. R. Scheult, University of New Brunswick:** A glossary of logging terms for use in all technical papers and discussions is needed to sharpen the language of logging and make terminology more precise.

**J. H. Godden, Dryden Paper Co.:** Traditional logging camps will soon be a thing of the past. A growing number of commuters carrying power saws instead of brief cases are already riding daily from their homes to the woodlands for their day's work. Dryden is one of many companies transporting their commuting loggers by bus rather than paying them to drive their own cars as had been the practice recently.

**Jeremie Savard, Consolidated Paper Corp.:** Mechanization has brought about development of new machines for almost every field of woodland operation. A completely hydraulic (Hopto) pulpwood handling machine for loading four-foot lengths onto trucks is one recent manifestation. Although the truckers at first refused to accept the switch from manual to mechanical loading, they later declined to revert to manual even when one of the machines broke down.

**Colin F. Sturton, the Singer Mfg. Co.:** Last year this company tested both wheeled and tracked (Bombardier Red Ram) mechanical skidders, comparing their performance with that of horses in hauling wood from stump to winter truck roads. If maintenance costs are reasonable, the ma-



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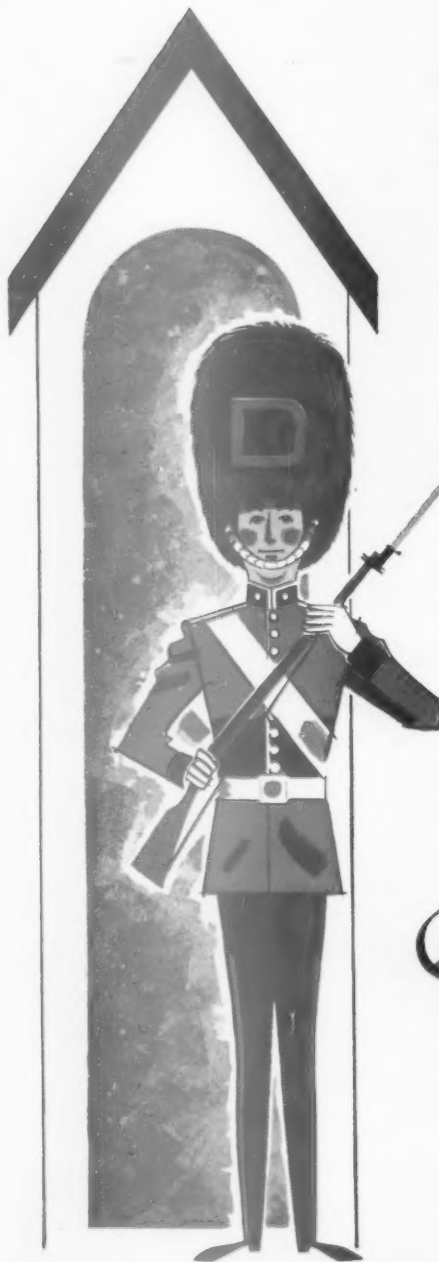
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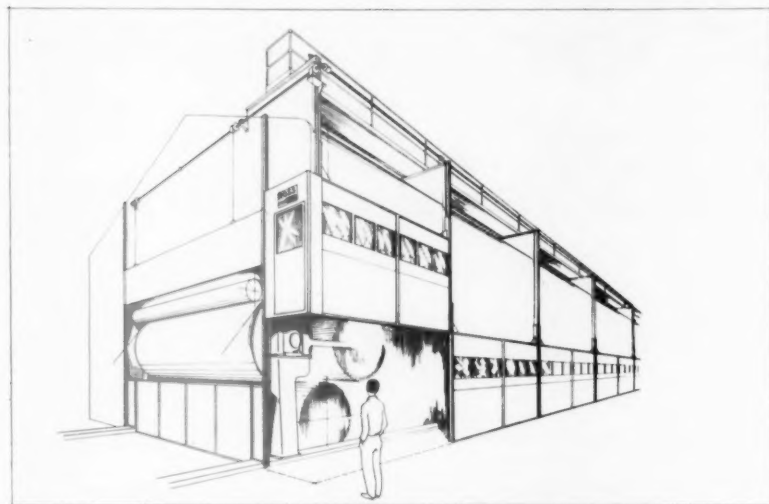
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# NEW EQUIPMENT

## Enclosed hood has new shape, construction



**Application:** Drying paper web.

**Features:** The Ross Hooper (enclosed) hood has undergone a design change. New features include aluminum clad panels with added insulation allowing for operations at higher dry bulb and dew point temperatures. These, says Ross, will improve paper quality as well as reduce radiation to the machine room. Top hood panels have 3 in. insulation, and the front lifting and rear sliding panels have 2 in. The new shape of the hood, along with an internal revision, allows withdrawal of air symmetrically from front and rear of the paper machine. This improves air flow through the hood and considerably simplifies construction and installation.

Continuous windows will be a standard part of the new hood. Windows will run entire length of the front side for increased vision.

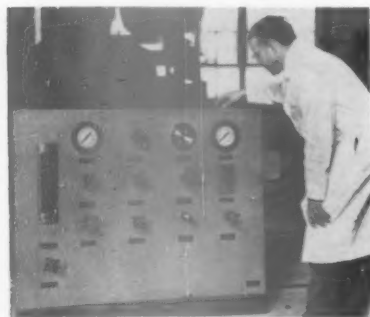
Another feature is elimination of front corner posts. When the lifting curtains are raised, the operating aisle is completely free, giving greater access to the machine. An embossed aluminum diamond pattern will be used on the hood for greater rigidity.

The Ross Hooper hood will still have available dew cell control for constant humidity within the hood and the panel lifting mechanism on the roof of the hood will remain exposed for ease of maintenance.

**Supplier:** J. O. Ross Engineering, 730 Third Ave., New York 17, N.Y.

## Continuous starch cooker

... is low-cost and compact



**Applications:** Preparation of starch for size press coating and calender solutions.

**Features:** Design of the cooker makes

it easy to remove parts for cleaning and replacement. Gauges and controls are mounted on the control panel for easy access and visibility. Simple adjustment of controls on the panel vary starch flow rate, cooking concentration, concentration of effluent starch paste or cooking temperature.

**Specifications:** Model 11 occupies 24 by 52 in. of floor space, handles up to 8 gpm of starch slurry. Slurry may be diluted with up to 12 gpm of dilution water before or after cooking. This permits raw starch slurry to be prepared in concentrations up to 3 or 4 lbs./gal. with savings in slurry tank capacities, etc. Temperature controls will maintain gelatinizing temperature at any level between 90° to 150°F.

**Supplier:** Penick & Ford Ltd., Inc., 750 Third Ave., New York 17, N.Y.

## Footage counter

... has photo-electric sensor



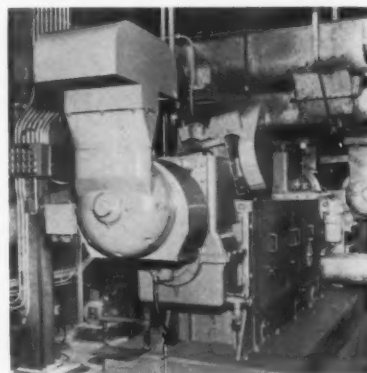
**Applications:** Lineal measurement of paper and paperboard production.

**Features:** Footage counter eliminates load drag inherent in mechanical registers, resulting in greater accuracy, says the manufacturer. Counter has instantaneous measuring, counting and recording operations. Multiple, predetermined settings may be selected as desired for sequential operation. Models are available with magnetically actuated pickups for applications where large amounts of dust or lint interfere with sound photo-electric practice.

**Supplier:** Standard Instrument Corp., 657 Broadway, New York 12, N.Y. Phone: ORegon 3-3200.

## Screw press

... features two stages



**Application:** To defiber and shred whole wood chips.

**Advantages:** French two-stage screw press is said to incorporate outstanding design features resulting in greater liquor recovery, decrease in refining power and increase in machine production.

Press features two-stage pressing operation that can cut refining power as much as 10 to 20%, says the manu-



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(PHOTO): The MARINE SULPHUR QUEEN  
 heading into Norfolk.

## NEW EQUIPMENT ...

facturer. Less power is used, is the claim, because one press can produce more tonnage than two single-stage presses because of more efficient application of pressure.

**Specifications:** Press barrel is 77-in. in length, longer than a single-stage unit. This added length, required by the two-stage pressing operation, provides efficient production by permitting injection of dilution water midway in the barrel. As a result press achieves up to 90% liquor recovery in a single pass.

Quality of end product, says the manufacturer, increases headbox freedom and makes further production savings possible, due to greater potential machine speeds.

For ease in servicing and to reduce downtime maintenance costs, the main drainage cage has removable skeleton inserts. Main drainage cage is hinged at the bottom and swings open to allow easy access to all normal wearing parts. An adjustable motor mount permits changing shaft in 30 minutes, minimizing interruptions to production flow.

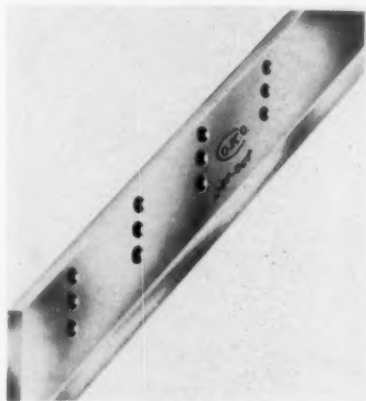
Press drive on the high speed feedworm is rated at up to 125 hp and up

to 500 hp on the main pressing shaft. Ratings are based on service factor of 1.5.

**Supplier:** French Oil Mill Machinery Co., Piqua, Ohio, Dept. B-217.

### Trimming knife

... reduces regrinding frequency



**Application:** For paper trimming operations.

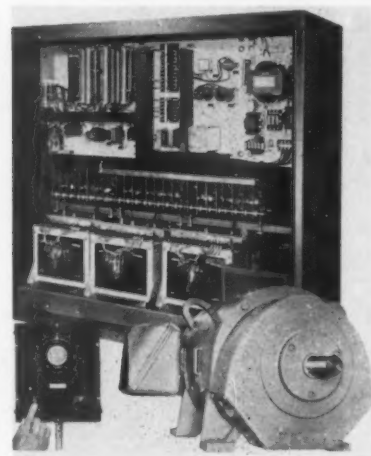
**Features:** Under ordinary use, this new "super-hardened" paper trimming

knife, called the OK Jet-Cut, can run up to 96-144 hours before regrinding without sacrificing accuracy, says the maker. Special process used in making this knife produces a high heat resistance, insures absolute hardness, giving greater wear resistance than before obtainable, says the maker. High alloy steel cutting edge resists dulling and holds its precision ground cutting edge longer. Dust and drag are virtually eliminated. Regrinding on conventional grinders restores edge to its original keenness.

**Supplier:** Ohio Knife Co., Dept. F, Cincinnati 23, Ohio.

### Variable speed drive

... has 3 basic components



**Applications:** Paper machines and other driven machinery.

**Features:** New unit has a static powered drive for wide range variable speed from in-plant a-c circuits, available from 1 to 200 hp. Statatron uses silicon diodes and saturable reactors to rectify the current from a-c to d-c. They work in combination with the transistorized power exciter to supply variable voltage. Use of a static power supply also reduces overall size of the control unit. In some sizes, the Statatron V-S is 35% smaller than a conventional unit. Elimination of a motor-generator set provides additional savings in maintenance costs. Unit is quiet. Static drive offers vibrationless operation of the control unit because there is no rotating power unit. Dynamic braking gives fast, smooth slow-downs and stops.

**Specifications:** Unit offers dependability in compact space. It has three basic components: The Super "T" d-c motor, the operator's station and the Statatron control cabinet.

**Supplier:** Reliance Electric & Engineering Co., Cleveland 17, Ohio. Request bulletin D-2508.

Turn to p. 80

## WHEN YOU NEED HELP IN A HURRY—



### Koppers coupling service cuts costly down-time

Not every coupling service need be an emergency. But it's the emergencies that really test a good organization. That's why Koppers maintains experienced field engineers and outstanding stock facilities throughout the country. In addition, if it's a Fast's Coupling you're replacing, we have a serial number and specific application history for every Fast's for easy re-ordering. And our modern manufacturing facilities have the

extra capacity to lick an emergency for special requirements.

**Example:** A modern windowless bank in Georgia was able to open for business as usual only because Koppers flew in a completed replacement coupling for its air conditioning unit. Elapsed time . . . request phoned to Baltimore after 10 in the evening . . . coupling arrived before 7:30 next morning.

KOPPERS COMPANY, INC., 1304 Scott St., Baltimore 3, Md.



### FAST'S COUPLINGS

Engineered Products Sold with Service





# PULP

# PAPER

Offices and representatives  
in 60 cities in the United States,  
Europe, Latin America,  
Africa, and Asia.



## BULKLEY DUNTON ORGANIZATION

295 Madison Avenue, New York 17, N. Y.

BULKLEY DUNTON PULP CO., INC. • BULKLEY DUNTON & CO., INC.  
BULKLEY DUNTON LTD., LONDON • BULKLEY DUNTON S.A.  
BULKLEY DUNTON A.G., ZURICH • BULKLEY DUNTON A.B.,  
STOCKHOLM • BULKLEY DUNTON PAPER (FAR EAST) CO., INC.  
HEMISPHERE PAPER CO., S.A.  
In New England — CARTER RICE STORRS & BEMENT



# big name in vessel reliability

because A. O. Smith has the big resources  
to build the best in corrosion-resistant equipment

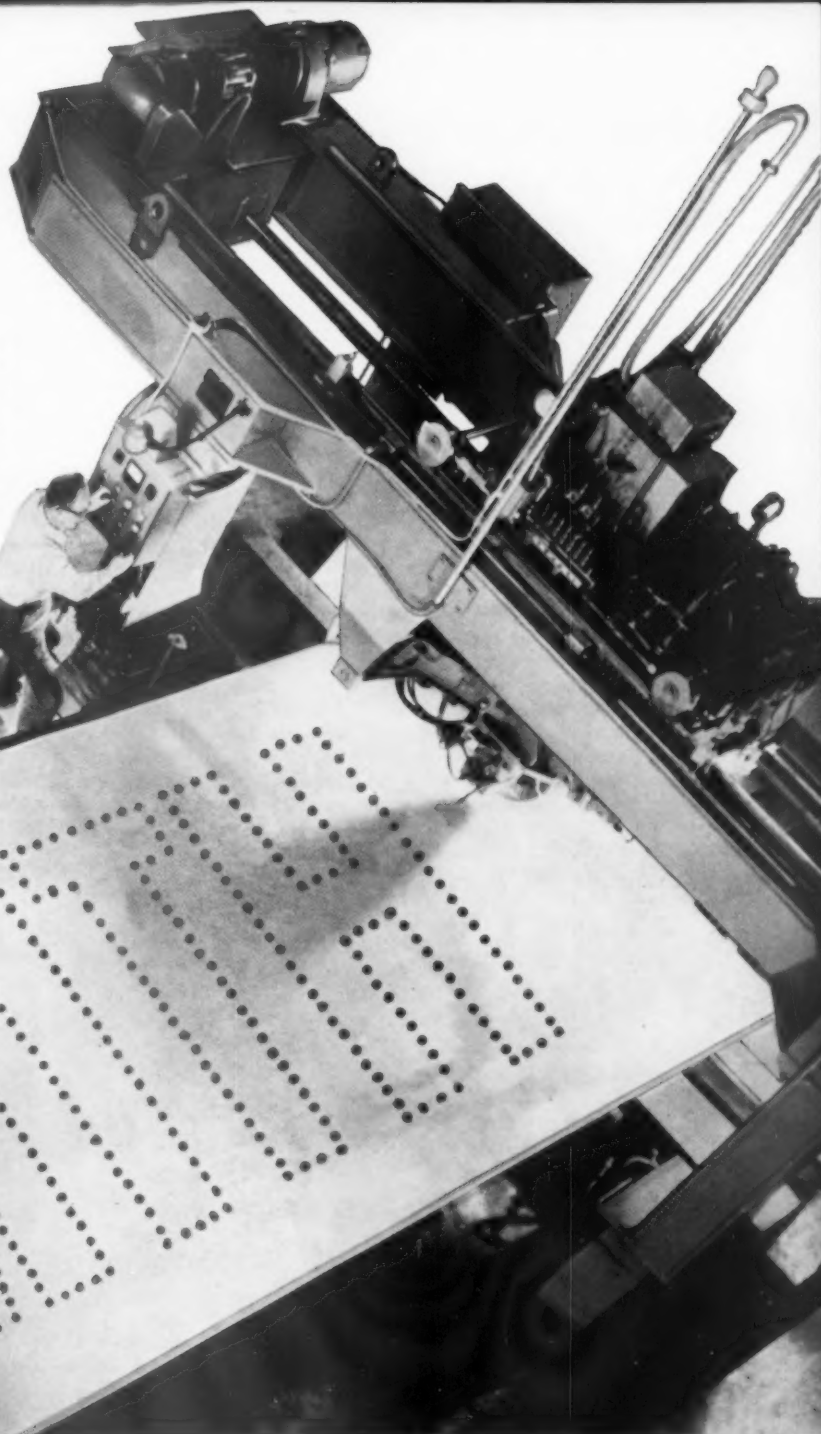
The paper industry knows it can rely on A. O. Smith. It knows that A. O. Smith has the big facilities to build the equipment they require . . . the big capabilities to combat corrosion problems encountered in both sulphate and sulphite service.

These abilities are the result of many years experience in the pulp and paper field. A. O. Smith has kept abreast of the industry's changing processes by leading in the development and application of corrosion-resistant alloy linings. It has also pioneered with Oxyrim® — a method of oxygenating rim steel to increase its corrosion resistance in digester service.

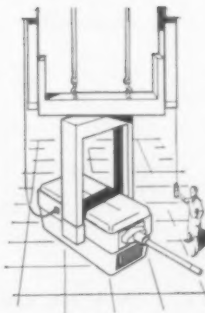


Of course, at A. O. Smith the search for a better way continues. The many combinations of organic and inorganic chemistry involved in the manufacture of pulp and paper and the improvements in material and fabrication require a never-ending program.

**WANT TO KNOW MORE ABOUT US?** Send for our new brochure titled, "From Arc to Atom." It tells all about the Atomic and Process Equipment Division of A. O. Smith — the complete story of our facilities and capabilities. Write Dept. 0113.



**FOR THE PAPER INDUSTRY**—A. O. Smith builds a full line of stainless steel, carbon steel, alloy-lined and glass-lined equipment. Digesters ... blow tanks ... hot acid accumulators ... acid storage tanks ...  $\text{SO}_2$  towers and coolers ... heat exchangers. Metallurgical and engineering facilities are, of course, available to all paper mill engineers.



**QUALITY CONTROL** — A. O. Smith's high standards for product excellence are a direct result of its extensive "all-seeing" test program. This summer an 8-million-volt linear accelerator will be installed at the Milwaukee plant. The "Big Eye" will permit faster, more thorough radiographic inspection of welds in heavy pressure vessels.



## NEW EQUIPMENT ...

### Centrifugal screen

... for pilot plant



**Features:** The A-1.0 centrifugal screen is designed specifically for laboratory use where sizable batches of pulp are to be screened. It is suited for experimental pulping systems using a head tank for uniform feed where a slurry of at least 50 lbs. of pulp has been diluted to proper consistency.

This screen has patented features used in full size Impco production screens and also has flexibility to operate on a wide range of various pulps. Inward flow characteristics can be

varied by adjustable stock distributing stator and the important rotor blade-to-plate clearance can be readily adjusted to maintain best screening efficiency for a given fiber. Screen plate clearances can be easily made by removing the transparent acrylic housing. Connections to screen are by flexible screens. Re-dilution shower pipe permits quality control of tailings as on the larger screens.

**Specifications:** Screen will handle through-put rates from about 2 tpd of groundwood to 8 tpd of linerboard softwood kraft. Capacity is related to hole size. Shower flow is 3 to 10 gpm. Feed consistency varies from 0.5 to 1.5%. Accepted stock varies from 0.4 to 1.4% consistency, depending upon feed conditions and amount of shower water used, while rejects thicken to 0.8% to 2.8%. A 3 hp, 1200 rpm motor is recommended and preferably some speed changing means, such as an inexpensive variable speed transmission to give a 600 to 1200 rpm motor speed change. Six sets of various size screens are available.

**Supplier:** Improved Machinery Inc., Nashua, N.H.

## CPPA Woodlands

Continued from p. 69

chine will have a place in company operations.

**S. J. Simons, Quebec North Shore Paper Co.:** Experiments in full-tree logging, most radical of all departures from conventional Eastern Canada harvesting methods, have been promising. Two specially developed machines (Vit-Feller Buncher and Bombardier processing unit) are keys to the operation, one felling the trees, gathering them in bunches and carrying them to a central process landing, the other stripping off the branches and slashing the trees into four-foot bolts. The experiment will probably reduce costs of the conventional four-foot logging system by 35%, and 40% of the company's forests can be economically operated by the full-tree method.

**W. D. Harkness, Marathon Corp. of Canada:** Transportation, not processing, is the key factor in production of pulpwood. A mechanized system of tree-length logging should be sought in which four different machines would be used—a forwarder capable of carrying four-cord loads at 5 mph over unprepared roadbeds, a truck-tractor with semi-trailer capable of handling loads of 12 cords at 26 mph over prepared roadbeds, and finally a processor for slashing the tree-length logs into eight-foot bolts.

**N. B. Langballe, Canadian International Paper Co.:** Time study men are invading the woods to evaluate the performance of machines. Woodcutting is recognized as a trade now and everyone in the woods is better off than formerly, but while means for operating are more efficient they require more skill. Decisions become more important because the effect of a wrong one has become costlier than when things moved at a slower pace. With more and more machines, there must be a statistically sound basis for choosing between different machines and operating methods.

**D. D. Hamilton, Canadian International Paper Co.:** A new pulpwood harvesting machine can limb and bark a full tree, then measure it and cut it to length, with excellent results. The C.I.P. pulpwood combine, under development for three years, weighs 14 tons, can move forward and backward, requires one operator and an attendant, and on haul roads has consistently been able to process two 40-foot trees per minute. Prime mover of the power system is a Ford 223 gas engine. Undercarriage consists of steel tracks from a Bucyrus-Erie  $\frac{3}{4}$  yd. shovel.

## We bet millions on our couplings



When you buy a Fast's coupling, you can bet your bottom dollar everything was built on the spot, not assembled piece by piece from other suppliers. Koppers multi-million dollar manufacturing facilities are the most modern in the industry ... with advanced program machines, highly accurate gear shapers, a complete forge shop.

For example, all Fast's Couplings are jig-drilled and jig-reamed for greater interchangeability of parts. Result: you get high-quality, smooth-running, long-lived units that are the choice of more equipment manufacturers than any other gear-type coupling. KOPPERS COMPANY, INC., 1304 Scott Street, Baltimore 3, Md.



## FAST'S COUPLINGS

Engineered Products Sold with Service



# These swatches represent two entirely different titanium dioxide paper coatings.

*One is an anatase grade, the other is a rutile grade.*

CAN YOU TELL WHICH IS WHICH?

## ONE IS THE NEW

These two swatches of  $\text{TiO}_2$  pigment have been applied by silk screen so that you can compare them quickly on this printed page. The formulas are nearly identical except that one contains a rutile grade, the other new *LD-C* anatase.

Although you'll achieve superior coating with regular paper mill machinery, the proof is there . . . new Glidden *LD-C* (on the right) has properties comparable to the rutile. The brightness of anatase is combined with the ease of dispersion and low viscosity features of rutile.

New *LD-C* is equally well suited for on and off machine, size press and calender coating. Compatible with all other common paper coating pigments and adhesives.

Being an anatase grade, new *LD-C* is for coating of all nonwaxing, plain and printed paper and board. And *LD-C* is priced as an anatase. Some users are obtaining savings of up to 2¢ per pound.

Higher machine speeds, heavier coating weights and other advantages are inherent in new *LD-C*. To get the full story, or samples, call your Glidden representative or our Baltimore headquarters.

**MANY GLIDDEN TECHNICAL FACILITIES ARE AT YOUR SERVICE** for development or testing work in paper. Write for this new brochure—just off the press—*Paper Research and Development Laboratories*.

# GLIDDEN ZOPAQUE<sup>®</sup> LD-C

**anatase grade  $\text{TiO}_2$  especially  
developed for paper coating**



**THE GLIDDEN COMPANY**

**FINEST PIGMENTS FOR INDUSTRY**

Chemicals Division • Pigments and Color Department  
Baltimore 26, Maryland



If you're a man who takes pride in his work, you're a man who reads his businesspaper carefully. Cover to cover. Advertising as well as editorial pages. Why? Because — as a man who gets a kick out of doing a great job — you know there's no better place to get so many good, practical ideas you can put to work with extra profit to yourself, and your firm, than in . . . your businesspaper.

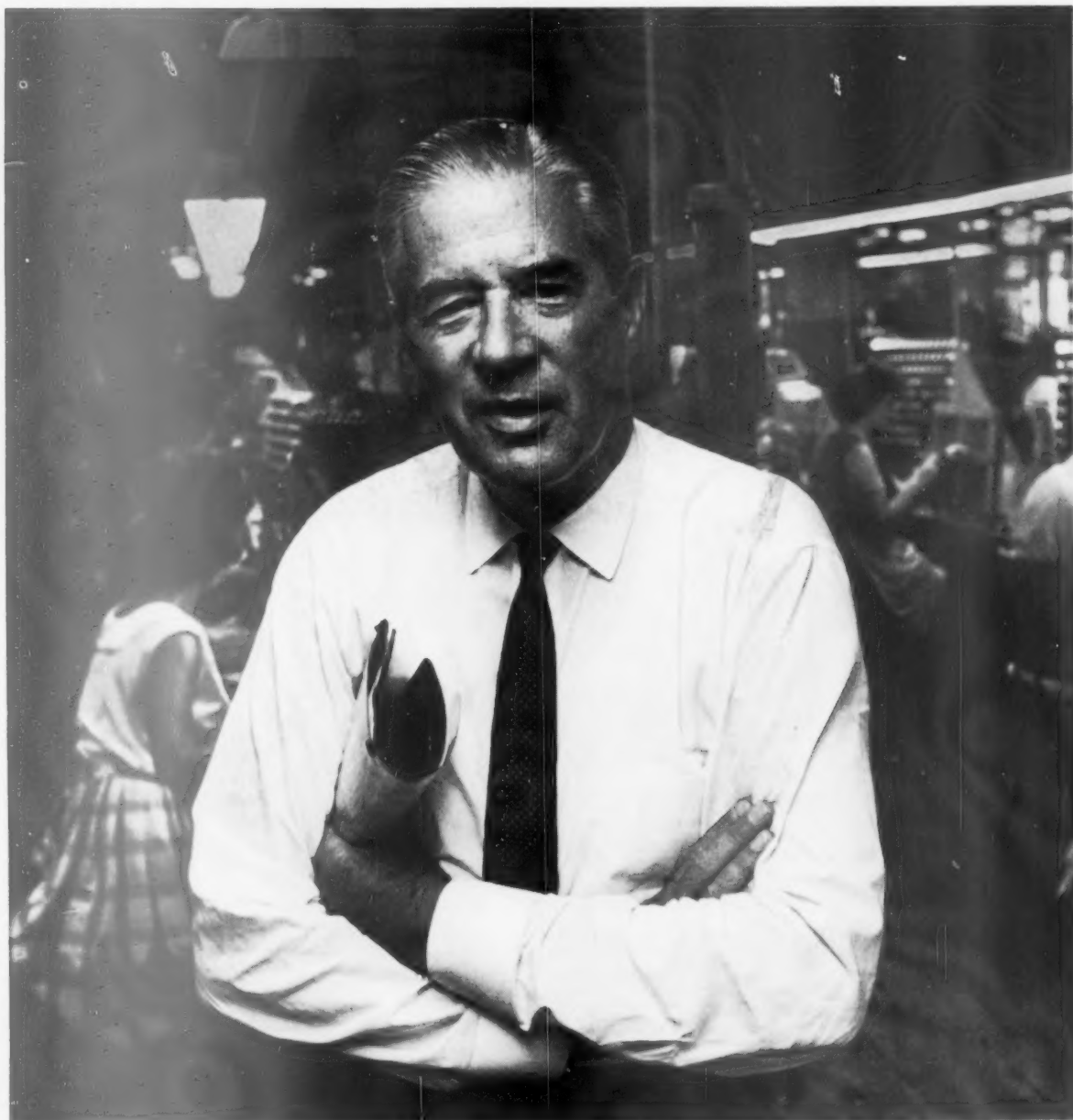


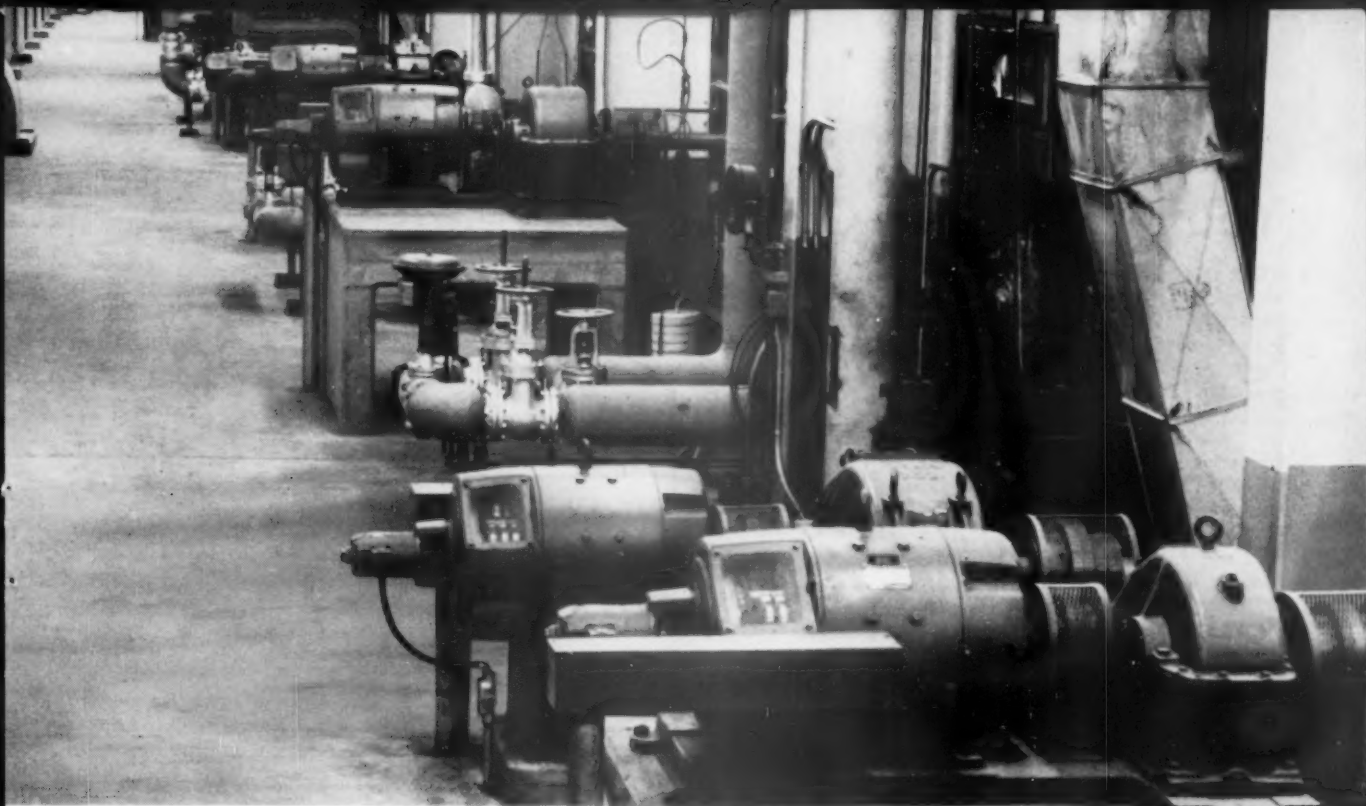
PHOTO ON LOCATION BY EHRENBERG

Where there's business action, there's a businesspaper . . .

**PULP &  
PAPER**



One of a series of advertisements prepared by the ASSOCIATED BUSINESS PUBLICATIONS



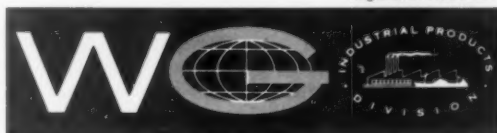
HOW WESTERN GEAR SERVES THE PAPER INDUSTRY

## PULP MILL DOUBLES PRODUCTION... CHOOSES WESTERN GEAR REDUCERS AGAIN

Tooling up for doubled production, the Georgia-Pacific Paper Company's mill at Toledo, Oregon, is now using **25 Western Gear SpeedMaster® reducers** in the number-two paper machine and attendant facilities at its newly expanded 600-ton per day Kraft mill. Georgia-Pacific Paper Company is part of one of the largest and most progressive forest products companies in the nation. SpeedMaster reducers were again specified for this modern two-machine mill to insure the fastest, most efficient mill operation possible. Eleven SpeedMaster reducers power the various sections of the paper machine, from the wet end to the reel. These include couch drive, wire turning roll drive, first press, second press, first dryer, breaker stack, bottom roll, second dryer, size press stationary roll, third dryer, calendar and reel. More Western Gear SpeedMaster reducers are in use in Pacific Northwest lumber and pulp mills than any other brand. A reputation of quality since 1888 has made them the standard drive of the industry. Give your mill the benefit of Western Gear leadership. For full information, write, wire or phone: **Western Gear Corporation, Industrial Products Division**, P.O. Box 126, Belmont, California. LYtel 3-7611.

\*Registered Trademark

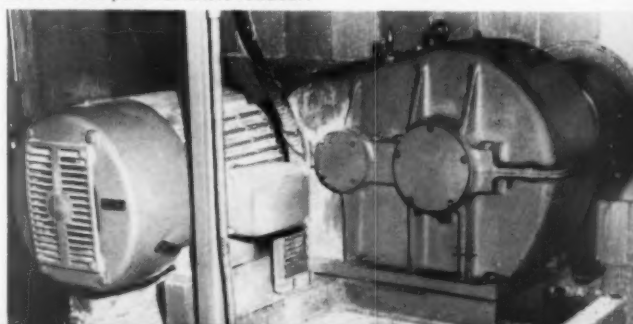
*on the long run... QUALITY COSTS YOU LESS!*



COPYRIGHT 1961 WESTERN GEAR CORPORATION

SpeedMaster S63 parallel shaft reducer driving flat box vacuum pump.

Couch pit agitator driven through a Western Gear SpeedMaster D56 parallel shaft reducer.



## Young retires at CZ, Scott succeeds him

SAN FRANCISCO—Frank A. Scott, newly elected vice president of Crown Zellerbach Corp. for newsprint and printing paper sales, succeeds Senior Vice President G. E. Young, a veteran of 36 years with CZ, who retired March 31.

Mr. Scott, a native of Vancouver, B.C. attended University of British Columbia and Rutgers. He joined CZ Canada Ltd. in 1933 and served in several paper sales positions, becoming vice president of pulp and paper sales in 1955. In 1959 he moved to San Francisco as assistant vice president for newsprint and printing paper sales for CZ Corp.

Mr. Young, who will remain as a member of the board of directors and as a consultant, joined a Crown predecessor, Crown Willamette Paper Co., in 1925 as Los Angeles manager of coarse paper division. Moving to San



SCOTT

Francisco in 1928 he became assistant sales manager of the division, and following the merger of Crown Willamette and Zellerbach Corp. he became sales manager of CZ newsprint divi-



YOUNG

sion. Mr. Young was elected a vice president in 1941 and a senior vice president and board member in 1959. He is a former president of the Newsprint Service Bureau. ■

## STRICTLY PERSONAL...

### Pacific



Magnusson

Larkin

Jackson Melcher

Participants of Pacific TAPPI's 23rd Shibley Award Contest get commendation from section's Award Chmn. Norval Magnusson, Puget Sound Pulp & Timber Co., Bellingham, Wash. Winner Alec Jackson, project chemist, Fiber Research, Seattle, received \$100 for his presentation on "Application of Polarizing Microscopy to the Study of Wood & Fiber Structure." A copy of Pulp & Paper Manufacture (Vol. 1) was awarded contestants John Melcher III, chemist, Puget Sound Pulp & Timber Co. ("Simplifying Experimentation by Factorial Design") and Donald J. Larkin, development chem. engr., Crown Zellerbach, Camas ("Pitch Measurement & Controls").

Harold E. Lindstrom, who has been a member of Simpson Paper Co.'s accounting dept. at Everett, Wash. since

1949, will transfer to the new Simpson Lee Paper Co. plant at Ripon, Cal. in charge of accounting . . . F. H. Johnson, formerly plant accountant-purchasing agent, promoted to mgr. at Continental Can's fiber drum manufacturing plant at Pittsburg, Cal., as successor to Paul Kreischer who retired. . . .

Nopco Chemical Co. appoints F. Russell Gagnier as Pac. Northwest sales representative to handle firm's complete line of industrial chemicals. He joined Nopco in 1948 as development chemist participating in paper, insecticide and leather fields. Since 1950 he has been in industrial division technical sales-service work in Calif. and New England. . . .

Joseph D. Russo is now supervisor, National Starch & Chemical Corp's technical development laboratory, San Francisco. He is responsible for adhesive development and service functions in West.



Frank Caskey, Portland, ex-Morden Machine Co. and CZ-Camas, has joined Dearborn Chemical Co. as a sales representative for Ore. and Wash. He has chem. degrees from Reed and Ore. St. U.



Brandt

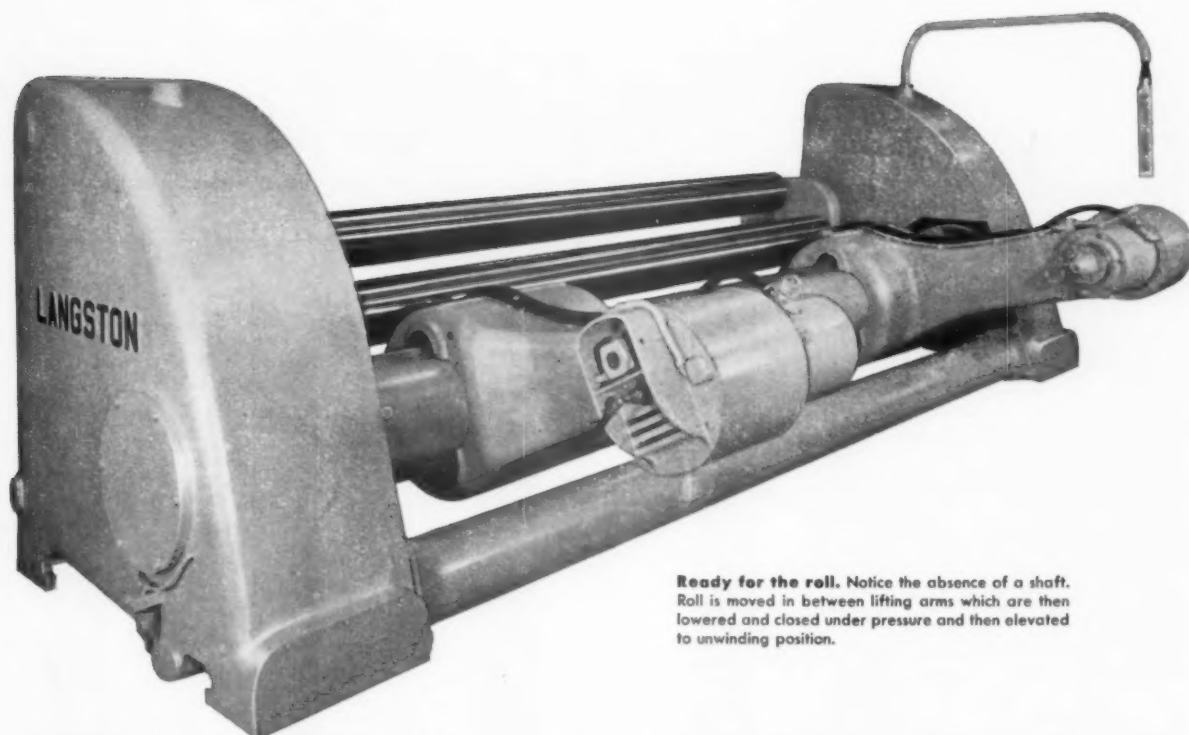
Landberge

Theller

Maurice J. "Mike" Landberge, technical service director, central research laboratory, General Dyestuff Co., a division, General Aniline & Film Corp., Easton, Pa., was the guest speaker at the spring meeting of Golden Gate Section TAPPI, Crown Zellerbach headquarters, San Francisco. Mr. Landberge spoke on coloring of paper and board. Here he is flanked by Walter R. Brandt, West Coast branch manager, General Dyestuff Co., secretary-treasurer, GG section TAPPI, and president, Waiting Room No. 7, International Brotherhood of Migratory Peddlers, and H. W. Theller, Crown Zellerbach, president of the section.

Fibreboard Paper Products Corp. personnel changes: Jack F. Havard, formerly vice pres.-engineering and resources, becomes vice pres.-manufacturing, San Francisco; George W. Burgess is appointed vice pres.-marketing; W. H. Eells, personnel mgr. of Antioch board mill and carton plants since 1956, promoted to regional safety coordinator for Antioch and Stockton plants; Jack Harding transfers from . . . turn to p. 88

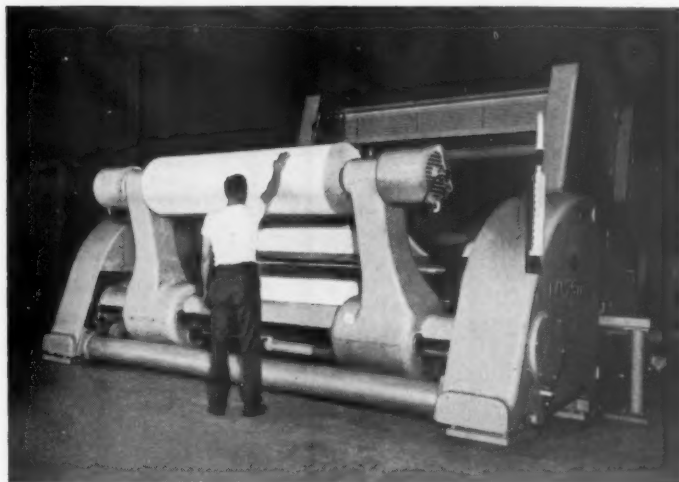




**Ready for the roll.** Notice the absence of a shaft. Roll is moved in between lifting arms which are then lowered and closed under pressure and then elevated to unwinding position.

## LANGSTON SHAFTLESS UNWIND STAND

**Boost your production . . .  
reduce your slitting and rewinding costs**




**Easy, fast, completely safe.** One man does everything. Operating pushbutton controls, he closes lifting arms, elevates roll, sets brakes.

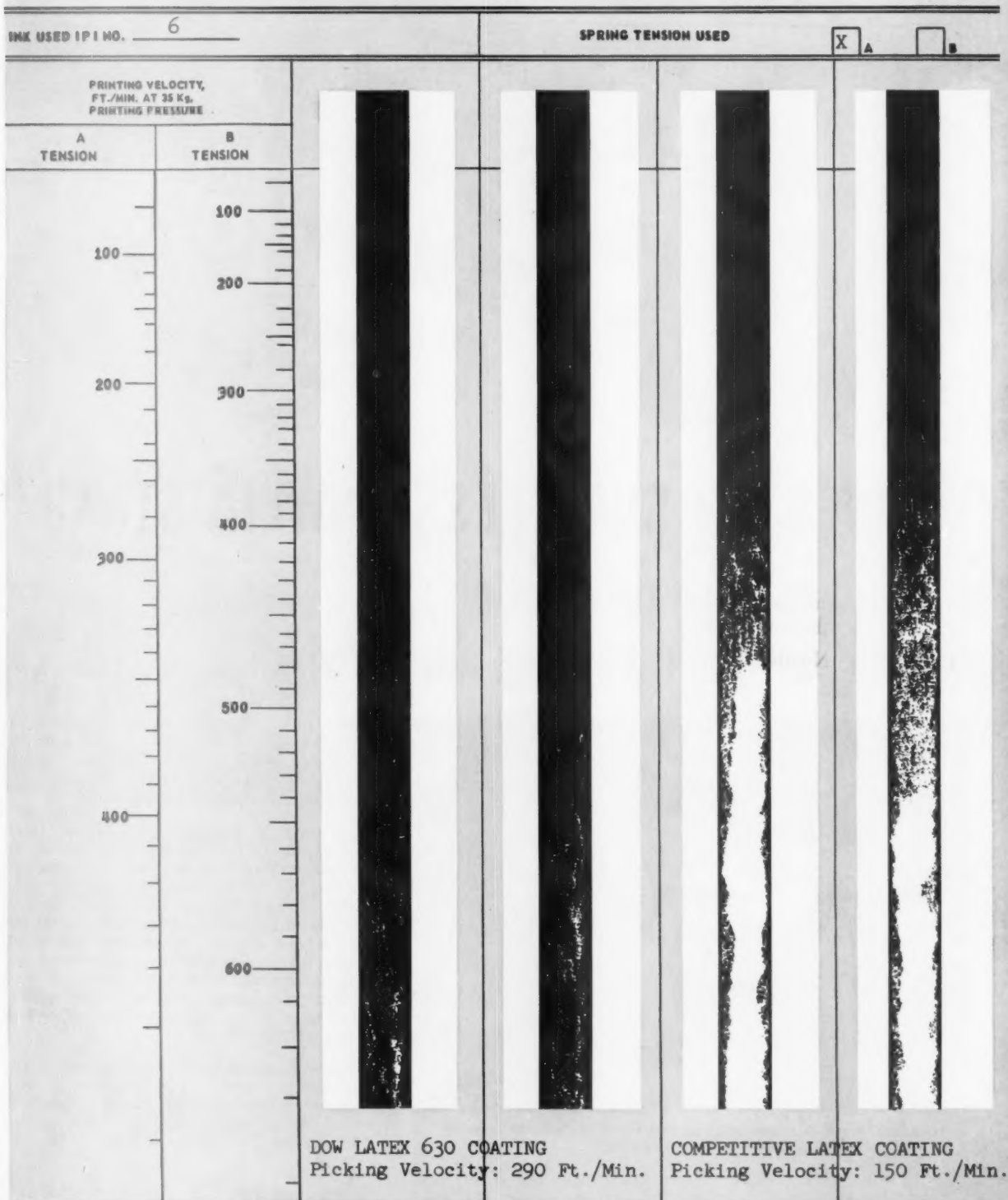
One man can load the heaviest roll. No heavy shaft to handle. No cone tightening. No couplings to engage. No crane lifting. Just pushbuttons. This is the Langston shaftless unwind stand for rewinding and converting applications.

You not only save time, you also get better unwinding. Roll can be positioned laterally by pushbutton control—even when the machine is running. It's held firmly under pressure for complete safety throughout the unwind. Several braking arrangements can be provided to handle a wide range of grades and conditions. Available extras provide for handling very narrow rolls; for constant tensioning; for automatic braking of idler rolls; for automatic web alignment and side register control; for web oscillation; and for local or remote control.

This new Langston shaftless unwind stand can be used with any make of slitter. Available for maximum roll widths up to 140 in. and diameters to 84 in. For complete information, write Samuel M. Langston Co., Camden 4, N. J.

**Langston**  **LEADERSHIP . . . BY DESIGN**

# VELOCITY CHART FOR IGT PRINTABILITY TESTER



# PROVEN commercially... greater pick resistance with DOW LATEX 630

The velocity chart, left, for IGT Printability Tester provides proof of the greatly superior pick resistance of new Dow Latex 630. Here, laboratory test data are reported on the relative printability of commercially coated papers.

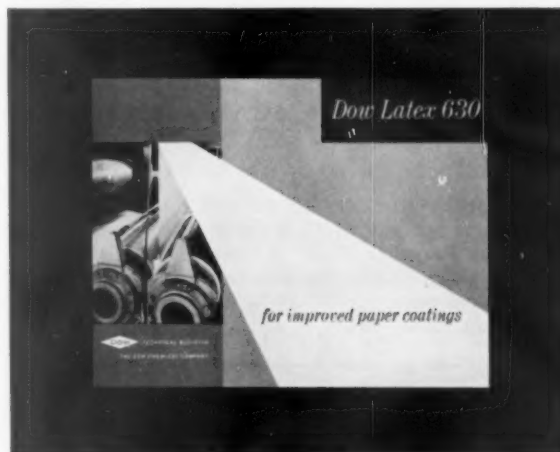
The two strips on the right coated with a competitive latex represent the performance of the "standard" grade. The two strips on the left represent the performance of that grade with Dow Latex 630 replacing the competitive latex in the coating.

In this test, Number 6 ink was used, and "A" spring tension. The test strips show that average pick velocity of strips with the competitive latex coating was 150 ft. per minute. But strips coated with Dow Latex 630 showed an average pick velocity of 290 ft. per minute . . . also note the reduction in bodystock splitting and the "blacker" black of the ink with the Dow Latex 630 coating.

In addition to greater pick resistance, Dow Latex 630 offers exceptional starch compatibility, excellent mechanical stability, and other outstanding advantages. Together, they spell superior printability . . . paper that permits clear, sharp, true-to-life reproduction with a minimum of problems for the pressman. Type reproduction stands out

sharp and clear, too, because coatings made with Dow Latex 630 produce a more uniformly smooth printing surface.

Find out how Dow Latex 630 can help you to produce better paper . . . and boost your sales. For detailed information, write today to THE DOW CHEMICAL COMPANY, Midland, Michigan, Coatings Sales Department 1931JJ4-17.



Write for a free copy of this informative booklet on new Dow Latex 630. It contains valuable data and information on how you can improve the performance of your coated papers.

THE DOW CHEMICAL COMPANY



Midland, Michigan

## STRICTLY PERSONAL . . .

starts on p. 84 . . . South Gate container plant to become personnel mgr. of Antioch plants; R. J. Brown was named mgr. of San Joaquin carton plant to succeed Ken W. Nelson who transferred to southern division sales.

### East

D. B. Wilkinson is now asst. to the exec. v.p. for production, research and development, Scott Paper Co. He will direct special projects in area of new products.



#### Alan Goldsmith Dies

Alan G. Goldsmith, retired vice president, The Mead Corp., died March 30 in Middlesex Memorial Hospital after a short illness. He was 68.

He joined Mead in 1925 in Dayton as secretary of an affiliate, The Mead Investment Co., later became treasurer and secretary of The Mead Paperboard Corp. From 1930 to 1937, Mr. Goldsmith was secretary of the parent company, then became vice president.

He was formerly board chairman of The Mead Sales Corp., and a director of Mead Investment, the Southern Extract Co., and the Macon Kraft Co.

Mr. Goldsmith graduated from Kenyon College in 1911. He was a Phi Beta Kappa. His brother, Philip H. Goldsmith, is sales mgr., Dominion Engineering Works, Ltd.

J. R. Atwater has been elected vice pres., administration, P. H. Glatfelter Co.

Major changes at Great Northern Paper Co.: Peter Standish Paine has been elected senior vice president. M. C. McDonald, president, reaches 65 this year

and has indicated a desire to retire at year-end. Mr. Paine is expected to succeed him as president . . . Hoyt Ammidon, Robert A. Haak and J. H. Heuer have been elected directors of Great Northern. Mr. Heuer is vice president, manufacturing, has been with Great Northern since 1951. Mr. Haak is vice president, sales, has been with the company since 1934. John T. Maines, has been elected vice president and manager of woodlands, for Great Northern. David F. Pollard has been promoted to manager of manufacture.



Lehman



Smith

Robert E. Lehman and Corson Smith have been appointed national accounts representatives for Pigments & Color Dept. of Glidden Co.'s Chemicals Div. Mr. Lehman is a Mercer U. grad and attended Western Michigan U.'s coating school. Mr. Smith majored in bus. ad. at Lehigh and for past 11 years has held various sales and management posts working with the paint industry. Both will headquarter in Baltimore, head office of Glidden's Chemicals Div.

Eugene Sannuto, graphic arts consultant, has joined New York and Penn as printing services representative . . . David Miller is now industrial sales representative for the upstate New York area for the industrial division, Corn Products Sales Co. He replaces Raymond Baird, who has retired . . . A. Thomas Johnston, Jr. has been appointed asst. to the mgr. of organic chemicals section, Solvay Process Div., Allied Chemical Corp. . . .

Mark Hollingsworth is newly elected exec. vice pres. of Hollingsworth & Vose Co., technical and industrial papers, East Walpole, Mass. Aubrey K. Nicholson continues as president. Grant Harrington for sales and Harold W. Knudson for research, were elected new vice presidents.

### South

Emil Bernard, new regional sales mgr. in the pulp and board div., will cover the middle south, southwest and part of the midwest from St. Louis headquarters. Mr. Bernard was formerly salesman for paperboard and fine papers for Lewis-Brownsville Sales, Inc., Chicago.

James Lawrence Donavan, who recently joined Gulf States as process engr., will have headquarters in Demopolis. He was formerly a field engr. for Stebbins Engineering and Mfg. Co.



Robert S. Davis is now president, Brandon Sales, Inc., Greenville, S.C. succeeding Kenneth E. Fryogle who has resigned. He will be responsible for sales and manufacture of Brandon Dryer Felts.

J. D. Dooley, 54, regional sales manager of International Paper Co.'s Southern Kraft Board Div., died suddenly in Chicago March 31.

### Midwest

E. L. Ticknor was named processing consultant, while Robert D. Bentz assumed the duties of supervisor of the data processing department at Nekoosa-Edwards Paper Co., . . . turn to p. 92

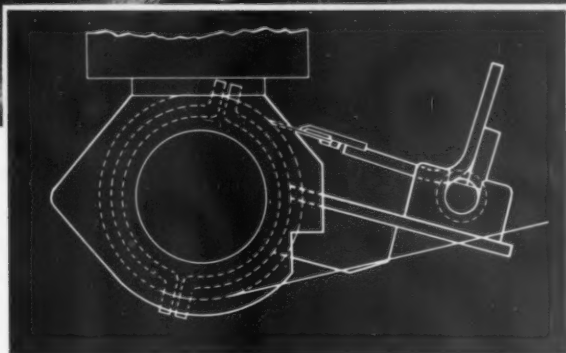
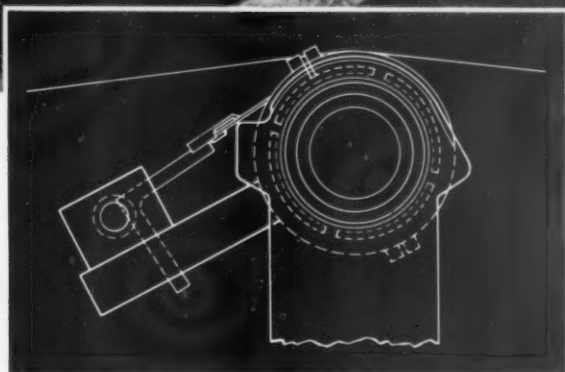
# Knox Felts

## KNOX WOOLEN COMPANY

### CAMDEN, MAINE

*America's First Manufacturer of Endless Paper Machine Felts*





## Doctored Clean by Lodding

WIRE ROLLS ARE KEPT CLEAN — absolutely clean — when they're Lodding-doctored.

Clean rolls on the Fourdrinier are all-important. They add life to wires, increase production, contribute to the quality of the sheet, while cutting costly downtime.

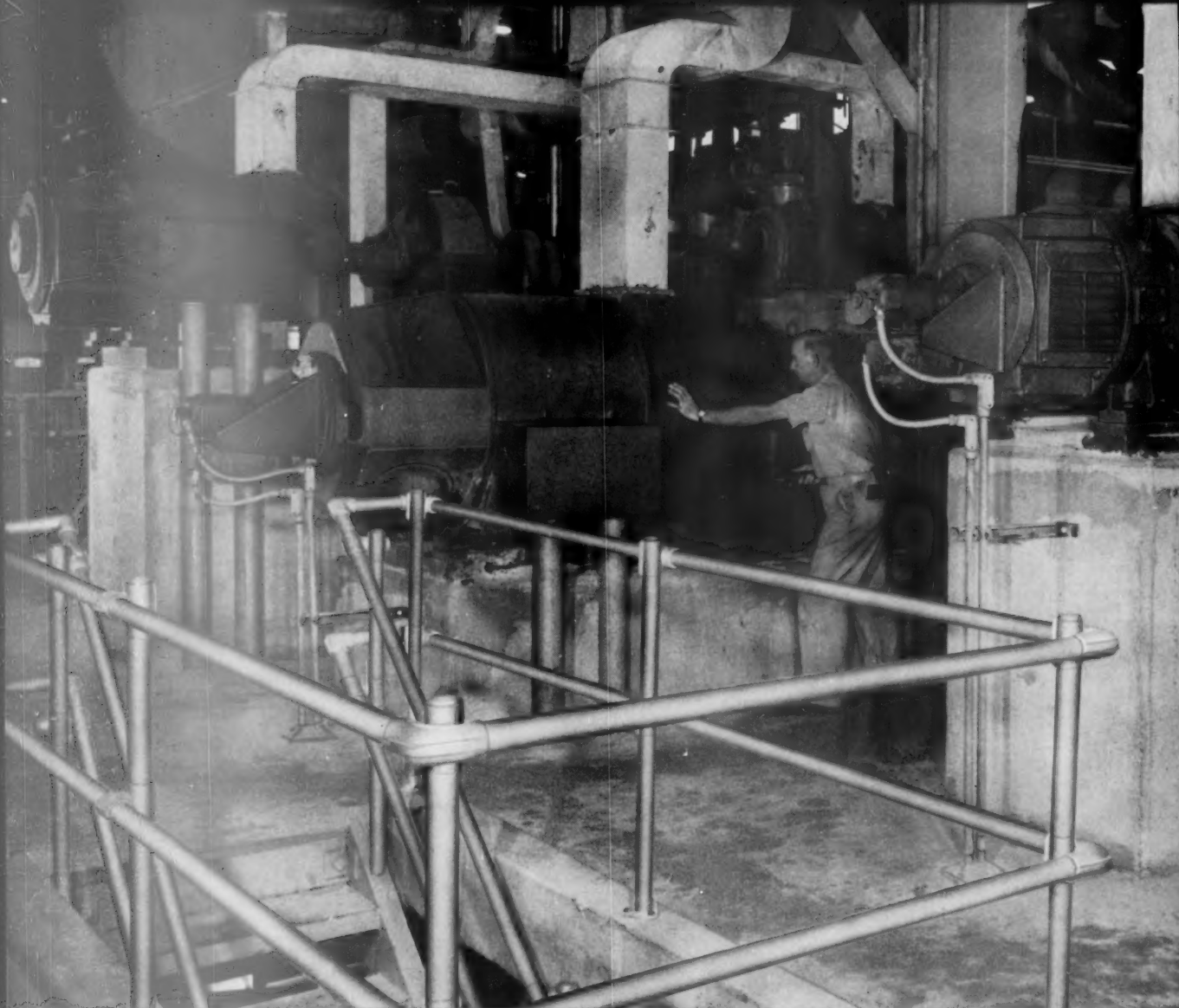
Every day hundreds of mills are profiting from Lodding's exclusive specialization in doctoring. Whether it be for a breast roll, return wire, stretch, wash or wire guide roll, each Lodding Doctor is engineered and custom-made for installation on a specific machine roll.

Proper balance and alignment are built into each doctor — to prevent friction drag, wire or roll damage. Doctor backs, blades and holders come in a wide variety of corrosion-resistant materials, their selection depending upon the particular mill conditions.

From the wet end to the reel Lodding is well qualified with over 30 years of specialized experience to handle every doctoring need, no matter how complex.

*Call Lodding or your nearest sales representative for complete information.*

**LODDING**  
*Engineering Corporation*  
AUBURN, MASSACHUSETTS



## CONTINUOUS PAPER 5 HOURS AFTER START-UP WITH RELIANCE DRIVE

The first sheet of newsprint was across the machine in 30 minutes. Four and one-half hours later the drier hoods were closed, and salable paper was produced shortly thereafter.

No electrical adjustments were needed during the start-up . . . no delays in production occurred. This is the result of Reliance's Coordinated Systems Engineering. On location were Reliance Sales, Service and Application Engineers . . . to make sure the

customer got what he asked for . . . and quickly.

The Reliance VSMR sectional electric drive, installed at International Paper Company's Pine Bluff, Ark. mill, is designed to operate the paper making machine at 2500 feet per minute, using 2908 installed horsepower.

Your Reliance Sales Engineer can help you solve your drive, motor or system problems. Consult your telephone Yellow Pages, or call or write direct.

A-1690

# RELIANCE...builders of the tools of automation

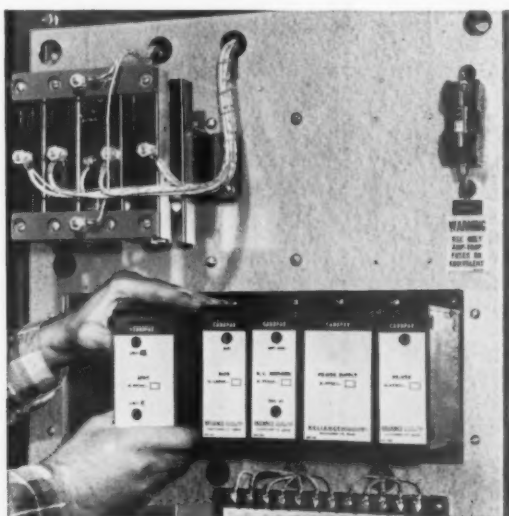
**NEW DUTY MASTER D-5000** design brings you new standards in coolness, quietness . . . and more horsepower in less space. Frame dimensions that held 150 hp. now contain 300 hp. There is better heat dissipation from the frame itself. Air flows easily through the entire grilled end areas—exhausts through long, protected slots at the sides and bottom. New fingerless ducted rotor design means better cooling than any other previous motor. You get all the famous Duty Master features in this new D-5000 . . . special lubrication design, drip or splash-proof and complete open motor protection. Bulletin B-2515.



**MASTER GEARMOTORS** are built to meet the roughest type of service, as noted in this application on a self-unloading potato truck. This right angle gearmotor operates at low voltage . . . activates the chain drive of the unloader. Enclosed Master Gearmotors are impervious to water, dust, mud and other outside contaminants. They simplify installations, save space with vertical, horizontal or flange mountings . . . output shaft over, under, left or right. Full line,  $\frac{1}{4}$  to 125 hp. in right angle, parallel or combination. Bulletin E-2409.



**REEVES MOTODRIVE** operates this automatic gathering machine, which collates magazine sections. Due to the varying number of books per hour . . . 1000 to 8000 . . . use of the Reeves Motodrive is both practical and economical. Speed settings within its output range are infinite. You can get a Motodrive from  $\frac{1}{4}$  to 40 hp. Speeds as high as 4660 rpm. and as low as 1.71. Speed variation from 2:1 to 10:1. Hundreds of space-saving assemblies. Catalog G-100.



**NEW SCR REGULATORS AND EXCITERS.** Reliance is the first to offer, for industrial use, a complete line of regulators and exciters using solid state silicon controlled rectifiers. "Cardpak" plug-in type modules give you low maintenance—greater dependability. Now, Reliance V\*S Drives are more reliable than ever, because these devices are extremely long-lasting, tubeless—and positive in performance.

## RELIANCE ELECTRIC AND ENGINEERING CO. •

DEPT. 184A, CLEVELAND 17, OHIO • Canadian Division: Toronto, Ont.

## Meet Huyck's "GERRY" CASEY



"Gerry" Casey (William G.) has been associated with the textile industry for 39 years, the last nine of which have been with the Huyck Felt Co. at its Rensselaer plant.

"Gerry" is now Huyck's Assistant Mill Superintendent at Rensselaer. He also has been Plant Manager of Kenwood Mills in Cavendish, Vermont and General Manager of Huyck's Fabric Division. As such he has been closely associated with both the design and manufacture of industrial fabrics.

"Gerry's" formal training included attendance at St. Michael's College and Lowell Textile Institute. His experience and "know-how" are reasons why Huyck Performance is High Performance through experience.

## HUYCK FELTS

First in felts since 1870

## STRICTLY PERSONAL...

starts on p. 88 . . . Port Edwards, Wis. Mr. Ticknor has been with the company since 1935, and has been tabulating department supervisor since 1943. Mr. Bentz joined the company in 1957, and has been assistant supervisor since 1957.

Henry E. Walter has been appointed director of manufacturing for Wood Conversion Co., St. Paul, Minn. From headquarters in Cloquet, he will direct manufacturing operations for the company's main plants at Cloquet, Minn. and Riverside, N.J. He replaces A. L. Spafford, vice president, manufacturing, who retired after nearly 40 years service.

Earl F. Otto, director of industrial engineering dept., Consolidated Water Power & Paper Co., has retired. He had completed 46 years with the company . . .

Robert W. Agler has retired as president of the container division, St. Regis Paper Co. He joined St. Regis in 1955 when General Container Corp., of which he was president, merged with St. Regis. . . .

Ward J. Anderson has been promoted to power supt. for Consolidated Water Power & Paper Co. He succeeds the late E. E. Belter. As power supt., Mr. Ander-

son will be responsible for production of hydroelectric and hydromechanical power for Consolidated and Wisconsin River Power Co., and coordination of steam and power production in the company paper mills on the Wisconsin River . . .

M. E. Ocker, manager of the Wichita plant and sales division of Bemis Bro. Bag Co. since 1928, retired from the company Feb. 28. He had been with Bemis for more than 50 years. He is succeeded by George W. Finlay.

Paul E. DiBenedetti has been promoted to market development representative in paper section of A. E. Staley Mfg. Co.'s marketing div. He moves from Staley's UBS Chemical Co., Cambridge.



## Pulpwood



Moser

Day

### Top Logging Safety Awards

Crown Zellerbach Corp's Clackamas Tree Farm Div., Mollalla, Ore. is honored for operating full year with no lost-time injuries. Here M. A. Moser, supt., receives state award of merit from Richard Day of Oregon State Industrial Accident Commission. Other awards won by the division: National Safety Council's 1st place plaque in class B logging; Crown's E. P. Stamm plaque going to northwest div. achieving highest safety improvement, and new Chas. E. Nichols award for overall logging efficiency.

Paul M. Garrison, mgr., Crown Zellerbach Corp's. Southern timber operations has requested early retirement to take up private consulting work in timber management. A. G. Curtis has been named manager to succeed Mr. Garrison in a general realignment of responsibilities for forest management and pulpwood procurement. Mr. Curtis has been mgr., pulpwood procurement since 1938. . . .

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# STRICTLY PERSONAL...

## Canada



C. D. Brown is now asst. technical supt., Columbia Cellulose Co. at Prince Rupert, B.C. He will direct acetate and viscose pilot plants, and main and control labs.

Robert Brown, mill mgr., Anglo-Newfoundland Development Co., Grand Falls, Nfld., recently completed 50 years with the paper company which he joined as a junior electrician in 1911 at an hourly pay rate of 7½ cents. In 1957 he was appointed gen. supt. mill services and became mill mgr. last year. Mr. Brown is said to be the only employee of the company with a 50 year service record.

Benton R. Cancell, exec. vice pres. in charge of operations, St. Regis Paper Co. and Albert F. Gurr, for many years an executive with Consolidated Paper Corp., have been elected to the board of Consolidated, based in Montreal. Mr. Cancell was the first Canadian representative

of the U. S. War Production Board during World War II, later becoming director of the board's forest products bureau in Washington. He was exec. vice pres. Powell River Co. before going to St. Regis. Mr. Gurr first joined the Consolidated organization 38 years ago when he became associated with Wayagamack Pulp & Paper Co., one of the predecessor companies.

T. C. Anderson has been promoted to project mgr. in the Toronto development and planning office of Abitibi Power & Paper Co. Gordon Sutton has been named mill mgr., Fort William (Ont.) division, with Harvey Turmaine, mill mgr., Thunder Bay division.

## Suppliers

The Oilgear Co. has a new sales, service and application-engineering office located at 53 E. St. Charles Rd., Villa Park, Ill.; phone BRowning 9-4650. Parts of Illinois, Indiana, Kentucky, and Michigan will be covered from this office.

Clarence (Butch) H. Paneitz directs the sale of Oilgear components in this ter-

ritory. A member of the Oil gear team since 1935, he became Detroit district manager in 1951, and was appointed Chicago district manager in 1960.

Working with Mr. Penceitz as engineering representative is Vitious (Vit) P. Jurkonis, who also joined the Oilgear team in 1935.



Norman



Good

Eric B. Norman, formerly asst. sales mgr. of B. F. Perkins & Son Inc., has been appointed sales and service representative for H. W. Butterworth & Sons Co., covering the west, N. Y., Mich., Wis. and Canada. Earlier he had been with E. B. Eddy Paper Co., Hull, Que. Amos Good, who has been associated with paper machinery builders, will cover the south and Middle Atlantic states as sales and service representative for Butterworth. He had previously been with Moore & White Co., Sandy Hill Iron & Brass Works and Riegel Paper Co.

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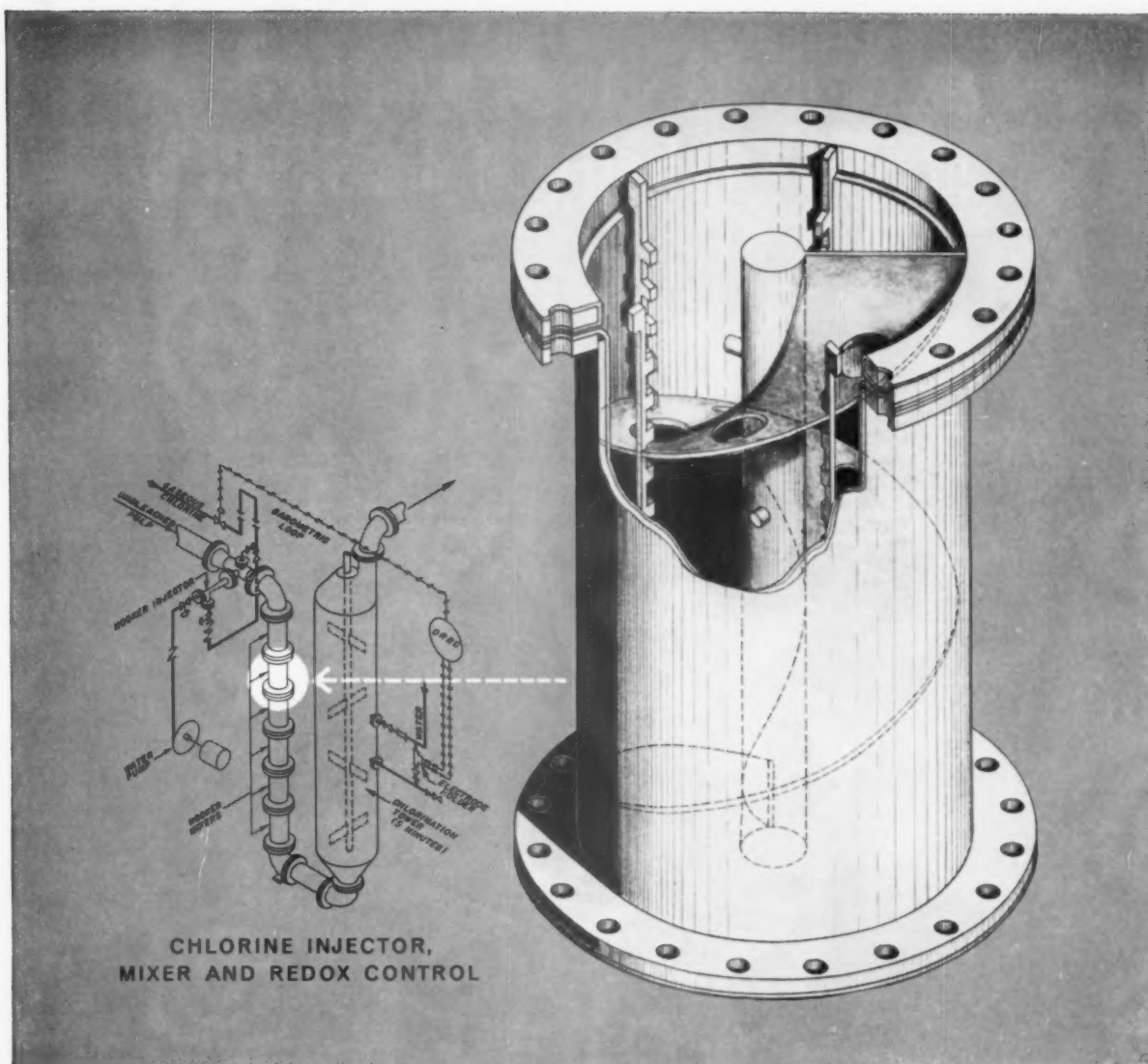
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## Another step to better pulp chlorination: stock line chlorine-pulp mixing

Now, a different kind of chlorine-pulp mixer—developed with typical Hooker chemagitation—puts an end to the guesswork in pulp-chlorine mixing.

This rugged mixer breaks up fiber clumps and distributes the chlorine uniformly throughout the pulp slurry so that each fiber receives the same amount of chlorine.

Thorough mixing with Hooker mixers means higher pulp strength, higher brightness, easier control of subsequent bleaching stages, more uniform pulp quality, and reduced chlorine consumption.

Costs go down and profits go up.

Successful control of chlorine addition by redox potential requires thorough chlorine-pulp mixing. Hooker mixing in combination with Hooker chlorine injection, redox control, and retention-time control adds even more to increased profits.

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For further details on all these Hooker pulp-chlorinating components, write for descriptive literature.

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ESTABLISHED 1866



## ... Market Pulp

starts on p. 55 . . . in 1960 averaged 71% of capacity. Forecasts of the Econometric Institute promise no improvement in 1961.

Production in the rest of the world rose by 6% in 1960; production averaged 78% of capacity. Since 1946, U.S. production of rayon and acetate has increased by 20%, production in the rest of the world by 432%. U.S. producers currently service 18% of total world demand, compared with 49% in 1946.

As a result of these drastic changes in the pattern of world markets, domestic producers of dissolving woodpulp are currently channeling 37% of their total production to export markets—compared with only 3% in 1946.

Overexpansion on a world basis, the attempted general exchange of exportable surpluses, and the competition of new non-cellulosic fibers have resulted in falling prices and profits in world markets—particularly in the U.S. market. The framework of world competition is not likely to change significantly in 1961.

**Woodpulp**—U.S. production of woodpulp in 1960 exceeded production in 1959 by 4%. The comparable gain in 1959 was 12%. For 1961, the Econometric Institute forecasts a gain of 3.2% in domestic woodpulp production. At this level, production in 1961 would average 91% of practical capacity. The average operating rate in 1960 was 90%; in 1959, 91%. For the entire post-war period, U.S. woodpulp production has averaged 93% of practical capacity. Therefore, 1961 should go into the records as a near-average post-war year.

Scheduled increases in domestic woodpulp capacity over the next few years are of relatively lesser magnitude than in paper and paperboard. These trends suggest the possibility of relatively better operating rates for woodpulp than for paper. Optimism with respect to the operating prospects two or three years hence must be tempered by the knowledge that new pulp projects can still be initiated and completed. For the foreseeable future, a near-average peace-time operating rate is perhaps as much as the domestic woodpulp industry can reasonably expect.

**Market Chemical Woodpulp**—U.S. production of market chemical woodpulp in 1960 exceeded 1959 by 16%. This compared with an increase of 13% the year before. Production averaged 68% of estimated capacity in 1958, 75% in 1959, and 85% in 1960. The production gain in 1960 was attributable to the strength of export markets. Export shipments of U.S. producers increased 94% last year, domestic shipments declined 5%. Of the total U.S. purchases in 1960, U.S. producers supplied 57%, foreign suppliers 43%.

The 1961 operating rate of the U.S. market chemical pulp sector will hinge primarily on: (1) The relative balance of world supply and requirements; (2) The extent to which U.S. producers are able to share in world demand.

Expansion programs will raise the combined market chemical pulp capacity of Scandinavia and North America by an estimated 700,000 tons in 1961. Since combined production totalled 9.9 million tons in 1960, the key figure, for 1961 is 10.6 million tons (9.9 million tons produced in 1960 plus 700,000 new capacity in 1961). To the extent that world demand exceeds 10.6 million tons, average operating rates in the world's market pulp sector will rise; to the extent that world demand falls below 10.6 million tons, a commensurate decline in operating rate must be expected.

The entire increase in world market pulp capacity this year is centered in supplying countries other than the United States. Unless world demand continues to rise significantly in 1961, expanding foreign capacities may soon be breathing hard on our position in world pulp markets.

## Westinghouse drives world's fastest kraft paper winder

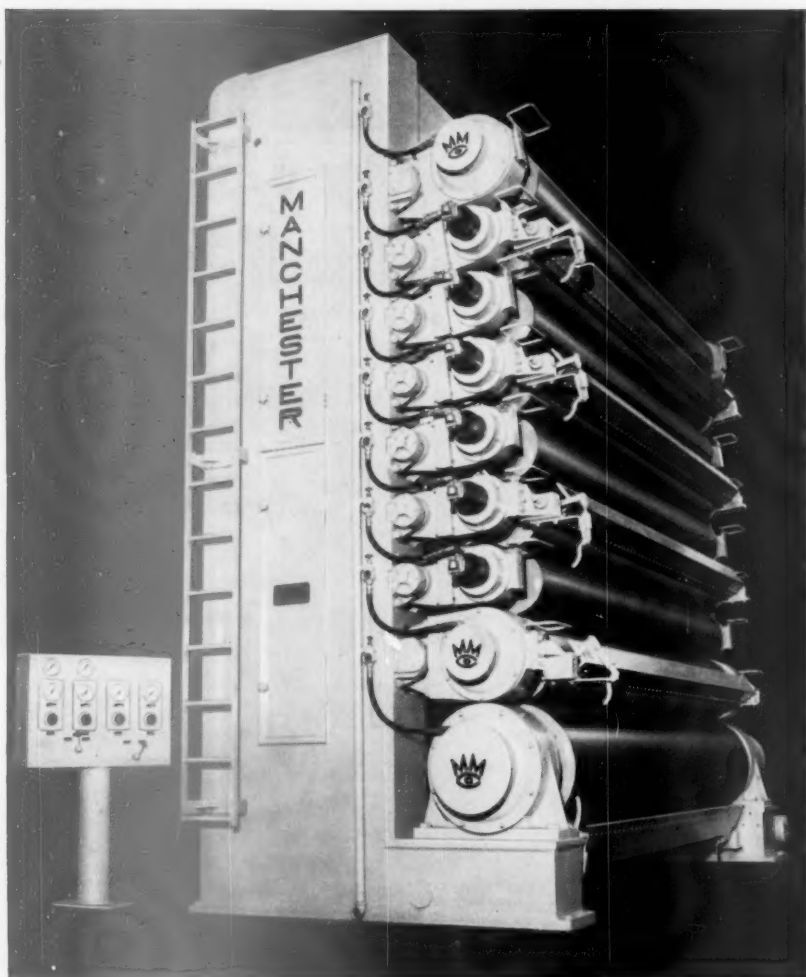


Two Westinghouse 300-hp Life-Line H d-c motors and a Westinghouse 400-kw motor-generator drive this 7200-fpm winder, rated the world's fastest, for Union Bag-Camp's new #7 machine at Savannah. These drives assure uniform threading speed, smooth and rapid responses, simple and easy operation. Westinghouse features in these drives also reduce downtime to a minimum, improve accessibility and safety, simplify maintenance. For more details on this #7 machine, see the next page.

J-96162-1

Westinghouse





## Manchester gives you everything you want in a calender

*New Manchester nine-roll, 147 inch face open side calender built for Champion Paper & Fibre Company, Hamilton, Ohio*

Here is a truly *new* open side calender with independent load control of any roll in the stack. Now you can produce a smoother, more uniform finish on a wider range of fine papers. Another outstanding feature is Manchester's air-over-hydraulic loading system. It permits precise pressure adjustments for all rolls . . . gives you all the advantages of sturdy hydraulic loading . . . yet uses only ordinary mill air pressure as a power source. No hydraulic pumps, tanks or motor drives needed!

All loading, unloading and nip relieving is accomplished through levers within the rugged, all-steel calender frames. Every adjustment is under finger-tip control from a master console.

This new calender is another example of how Manchester builds profits for paper makers through *modern*, efficient design concepts. For the new equipment you're planning now, why don't you call in the Man from Manchester? **The Manchester Machine Company, Middletown, Ohio**

*Manchester . . . profit builders for paper makers*



**THE MANCHESTER  
MACHINE COMPANY**

## ... Market Pulp

### Pattern of Production and Trade

**Overall Structure**—Turning now from the statistical framework of competition to the broader structural framework, domestic paper mills can be conveniently divided, with minor overlap, into three groups—each with competitive advantages and limitations:

(1) Paper facilities physically integrated with pulp facilities.

(2) Paper facilities that rely entirely upon purchased fiber.

(3) Paper facilities that rely upon interplant transfers of woodpulp from separate but affiliated mills.

**Group 1**—Have marked cost advantage in manufacture of low-end mass-produced grades; evidenced by the fact that 97% of total unbleached kraft pulp currently consumed in this country is consumed in integrated plants, compared with 75% in 1937. On the other hand, these plants rate low in versatility—opportunities for product diversification or new products are limited by relatively inflexible raw material supply and tools of production.

**Group 2**—Have the highest versatility. Raw material supply is completely flexible—some, we are told, buy as many as fifty brands of pulp. Their tools of production are also flexible—many make an extremely wide range of products. On the other hand, their raw material costs are relatively high—short runs tend to lower productivity and raise costs. To be economic, they must recover in value what they lose in volume. In markets for low-end mass-produced products, these mills have become almost completely non-competitive; in the markets for relatively high-volume grades made from bleached pulps, they are becoming less competitive. Their economic forte is the true paper specialty.

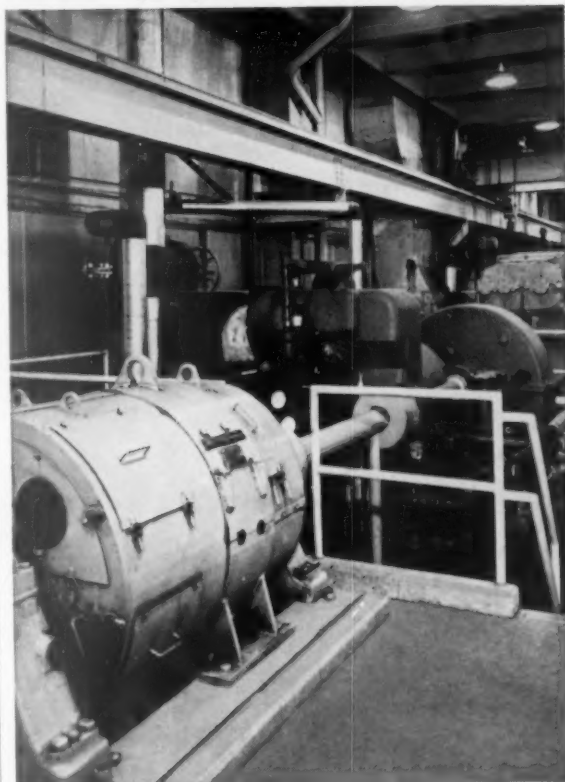
**Group 3**—Perhaps in a middle position in respect to both economy of operation and versatility. More flexible than the physically integrated paper mills, less than the non-integrated. Raw material and manufacturing costs are lower than the non-integrated. Their end-product distribution costs could be lower, on average, than the other two groups. These mills are equipped to compete successfully in the middle range of paper qualities—between high-valued specialties and low-valued mass-produced items.

**The Non-Integrated Paper Mill** has been an incubator of innovation in the paper industry. As a new product gains acceptance, however, growing volume invites competition from producers similarly equipped. Ultimately, volume reaches a level that invites the interest of integrated mills. The high-volume "specialty" becomes a competitive challenge for any mill that can make it cheaper or better. One by one, lower-cost integrated mills enter the field. A victim of his own success, the non-integrated paper producer looks for new fields to conquer. This is the way the free enterprise system works.

As a result of these competitive pressures, bleached chemical pulps, which 15 years ago accounted for only 42% of market chemical pulp consumption, currently account for 80%. By constantly improving quality and raising the unit value of its output, the converting sector has fulfilled its traditional mission—and at the same time prospered.

Why are problems of the converting sector currently greater than they have been in the past? Primarily, perhaps, because several of this sector's most successful "specialties" have suddenly and simultaneously achieved a "high-volume" status that attracts interest of integrated producers. Too many senior specialties are graduating from the "converting school" at the same time, and too few junior spe-

## Westinghouse turbine drives world's fastest kraft paper machine



Union Bag-Camp's new #7 machine rated at 3000 fpm. Its line shaft is driven by a 3,000-hp Westinghouse steam turbine and reduction gear. This turbine is of the multi-stage, non-condensing type, operates at a normal 400 psi and 750°F., exhausting at 80 psi . . . and is controlled within  $\pm 0.1\%$  of rated speed. Westinghouse design permits operation from maximum to zero speed on governor control and the operating speed range is always below first critical speed . . . factors which insure exceptional control, reliability and equipment life. For more details on Union Bag-Camp's new machine, see next page.

J-96162-2

Westinghouse



# Here are answers to your water and waste treatment problems-

## ... Process and Boiler Feed Water



The **ACCELATOR®** high rate treatment plant saves up to 80% in space. It clarifies or softens and stabilizes water in a single basin, and produces more stable effluent — a slurry contact — not a sludge blanket unit. Hot process softeners, Zeolite softeners and demineralization equipment are offered for boiler feedwater treatment. A full line of feeders, pressure filters and equipment for gravity filters including meters, rate controllers, control panels, and operating tables supplements the high rate line.

Bulletin 1825

## ... White Water and Waste Treatment ...



### CLARIFICATION by flotation

The **SEDIFLOTOR®** clarifier is offered where space is limited and high-rate clarification is essential. This air flotation unit is ideal for removing floatable suspended solids and gives most effective fibre and heat recovery.

Bulletin 6051

## ... High Rate Activated Sludge



The **AERO-ACCELATOR®** high rate activated sludge plant provides a multi-purpose unit for BOD reduction. Rapid mixing, biological oxidation and clarification under high loadings are effected within a single basin.

Bulletin 6510-D

## ... Stabilization Ponds



The **VORTAIR®** aerator is a mechanical turbine unit originally designed for oxygenating stabilization ponds and lagoons at paper mills. It provides effective aeration for activated sludge. Since this unit transfers oxygen directly from the atmosphere, it requires no compressors, yet oxygen transfer efficiency is high. It may be mounted on piers or pontoons.

Bulletin 6620



### CLARIFICATION by chemical treatment and settling

The **CYCLATOR®** clarifier treats wastes containing suspended solids of very fine or colloidal nature which require chemical coagulation for adequate clarification. This unit can provide solids recovery and heat recovery by reuse of the clarified effluent. Sedimentation clarifiers with skimmers and scrapers, are part of the INFILCO line.

Bulletins W-800 and 850

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414-60



## ... Market Pulp

cialties have been developed to replace them.

In the long-term development of the industry, it is unlikely that expensive large scale research and development programs can provide an effective substitute for the historic role that the flexible converting mill has played in our economy as an incubator of new ideas and products. Whatever transitions the future may bring, the industry will be the loser if, in realignment of plant and market, it neglects this essential function. To the extent that converting mill abdicates the role of innovation, others must assume it. The industry cannot possibly hope to do all its growing from the top down.

**Corporate Integration**, as distinct from physical integration, can be traced back to an early date in industry history. It was not until the late 1930s, however, that this concept began to assume real significance. At that time, three new bleached kraft pulp mills were built in Canada to supply affiliated paper producers in the United States. Corporate integration across the northern border provided:

(1) Free access to Canadian raw material at a time when there was growing opposition in Canada to the export of pulpwood.

(2) Free access to the high-volume American paper market.

Currently, about 850,000 tons of captive woodpulp is shipped each year from Canada, to support tied but separate paper facilities in the United States. Over the past decade, these interplant transfers of woodpulp from Canada to the U.S. increased 87%, while Canadian shipments of market pulp to this country declined 8%.

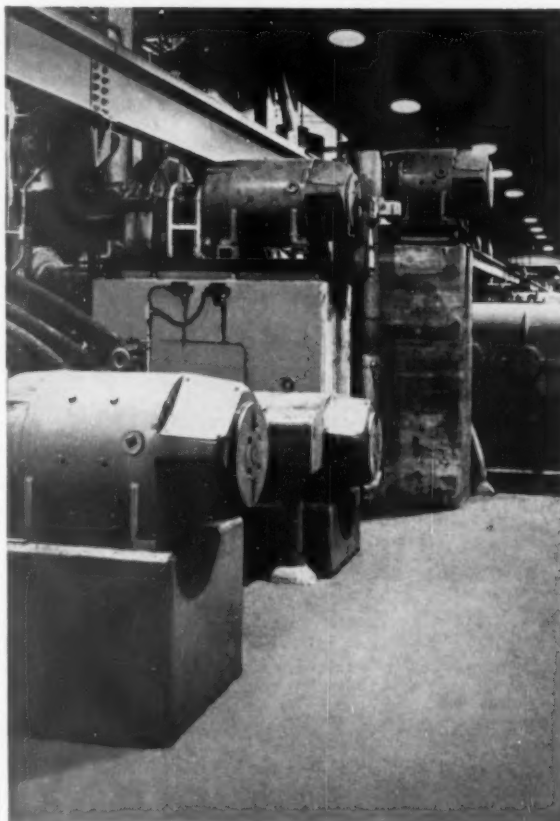
Following World War II, a similar trend began to assume significance within the borders of the United States. An important share of this country's paper and paperboard production is currently based on domestic interplant transfers of fiber.

Immediately following the war, the federal government, convinced that reliance upon overseas' fiber supply was not in the national interest freely issued Certificates of Necessity to encourage expansion of domestic pulp facilities. National security only required that total fiber supply should, at all times, be adequate to meet essential needs. The possible impact of these expansions upon patterns of production and trade, if weighed at all by government, was at best a secondary consideration. Yet, the revolutionary changes that have since taken place in the pattern of domestic production and markets are firmly rooted in early post-war government policy.

Corporate policy readily conformed to national policy—the economic urge for self-sufficiency in fiber was as strong as the political urge. Market pulp producers prepared to expand facilities with a view to taking over the burden of fiber supply that integrated mills, pursuant to war-time "withholding" directives, had involuntarily taken over from the Scandinavians. Integrated producers prepared to expand pulp facilities, not only to improve their position in growing end-product markets, but, in some cases, to retain the supplementary market pulp outlets that they had acquired through war-time "withholding." Non-integrated paper producers, wearied by the uncertainty and the volatility of pulp markets, decided, in some cases, to build their own pulp facilities.

Long after the political urge for fiber independence had faded, the economic urge lingered. It still lingers. Competitive pressures generated by new facilities have compelled others to protect their position in fast changing markets. Converting mills began purchasing existing pulp facilities to insure a long-range fiber supply, eliminate the middle man, and reduce raw material and manufacturing

## Westinghouse helper drives on world's fastest kraft paper machine

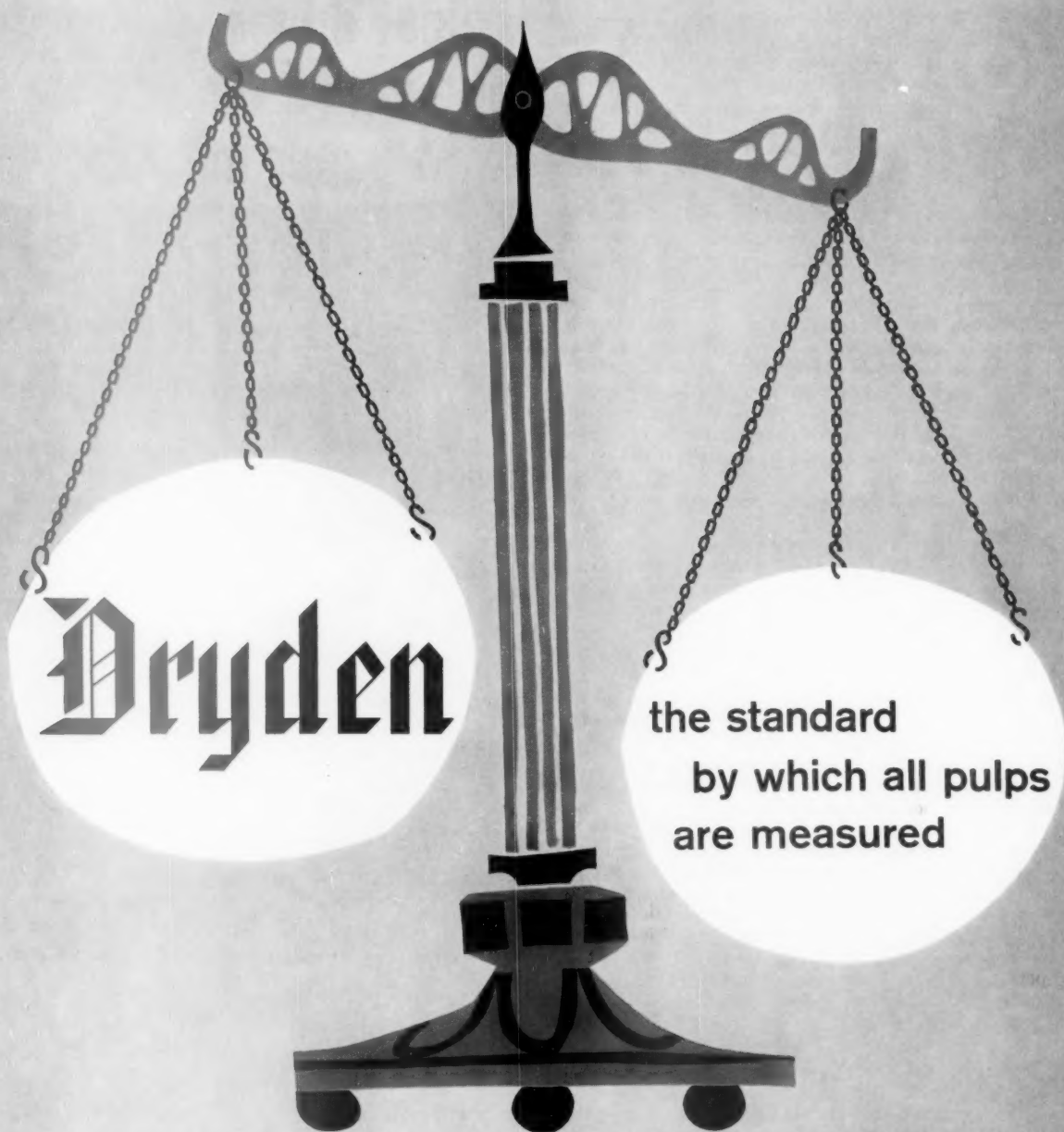


Twenty-two Westinghouse Life-Line H d-c motors make up the helper drives on both wet and dry ends of this new Union Bag-Camp high speed machine. These Westinghouse motors feature special insulation (much longer insulation life than ordinary Class B motors), a controlled ventilation system and 35% increase in commutating ability . . . to give this machine close regulation and faster accelerations, exceptional performance. For more details on this #7 machine, see next page.

J-96162-3

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## ... Market Pulp

costs. Later, market pulp producers began purchasing converting mills to secure guaranteed outlets for pulp surpluses and to obtain access to end-product markets that might offer better profits.

The short-term effect is to put new people into new businesses, compound competition, and generate still greater competitive urgency. There will be long-term effects, not the least of which will be emergence of a strong new competitive force in this industry composed of mills that are achieving improved competitive strength through corporate as opposed to physical integration.

Historically, the dominant factors in domestic paper supply have been the physically integrated and the non-integrated paper producers. Now a new middle force may necessitate adjustments in the other two major segments, and, in some cases, possible realignment of corporate policy and program.

**The Physically Integrated Mill**—In major markets for the end-products of unbleached kraft pulp, there can be no serious economic challenge from within the industry to the dominant position of the physically integrated paper producer. In the major markets for end-products of bleached woodpulp, however, the new middle force is a factor that must be taken into account. In these markets, the physically integrated mill will enjoy lower overall manufacturing costs; the new third force, the advantage of greater flexibility in a marketing area in which flexibility is important. This new third force could turn out to be a conduit for the movement of "high-volume" specialties from the non-integrated to the physically integrated mill.

The fiber economy will continue to be divided structurally into three parts. This represents a logical and efficient division of responsibility. If each sector recognizes its limitations and concentrates on end-products best suited to its talents, then the three basic sectors should tend to complement each other and not destroy each other.

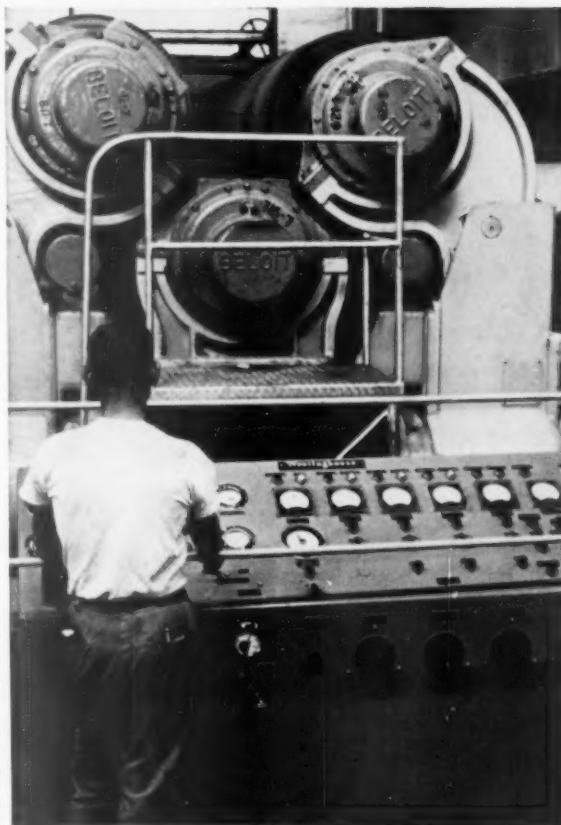
## Long-Range Competition

One other factor has a bearing upon the long-range competitive outlook—namely, persistent competition for untapped forest resources and for favorable plant sites. This competition is spurred, on one hand, by optimistic projections of long-term paper demand and, on the other, by a conviction that anyone who can gain control of forest resources and a favorably located plant site will be in the driver's seat for the long-term. In this connection, we stress two points:

(1) All of the optimistic forecasts of paper demand arrive at virtually the same conclusion with respect to basic fiber supply—namely, that with proper management, prospective fiber supply will be more than adequate to meet maximum foreseeable long-term requirements. A hundred years from now, in our judgment, the world's papermakers will be procuring enough fiber to produce all of the end-products that all of the world's salesmen can sell—it may not be woodpulp, but the chances are it will be a fiber equally good, and equally cheap.

(2) The concept of what constitutes a favorable site for pulp and paper manufacture may change very drastically in the next 25 to 30 years—just as it has in the past. Several major domestic companies are currently interesting themselves in the potentialities of reeds, straws and grasses; others are weighing the long-term merits of tropical plantations; still others are working with synthetic papermaking fibers.

## Westinghouse controls on world's fastest kraft paper machine



Westinghouse static regulators control all wet and dry end helper drives, as well as the winder drive. In use by more than 500 paper producing and finishing operations, this Westinghouse static control provides simplified, automatic regulation . . . maintains paper quality at high speeds. For more information on how Westinghouse serves Union Bag-Camp's high-speed machine, see the next page.

J-96162-4

Westinghouse



# Are your rosin size costs too high?

## *Nopco® Wax Sizes do more—cost less*

Whether your mill uses rosin or fortified-rosin sizes, Nopco can show you how to reduce your sizing costs by using its wax sizes. In addition to saving you money, Nopco Wax Sizes impart improved resistance toward water, ink, lactic acid, alkalis and blood; improve gloss, smoothness and printability; and decreases fuzz, curl and brittleness.

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tage you cannot afford to overlook. Let us help you set up a program of tests and trial runs to prove it to your own satisfaction.

Our Technical Service Engineers, utilizing over 30 years' experience with wax sizes, are ready to show you the advantages to be gained by the use of wax sizes in conjunction with rosin sizes. Write today for further information.



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## ... Market Pulp

It is impossible for anyone to envision with certainty the prospective impact of scientific achievement upon long-range profit prospects of any new project. It is not only possible but necessary for everyone to measure, within reasonable limits, the opportunities for short-term profit. In pulp and paper, long-term success can only be built on a series of sound short-term moves.

## Conclusion

Until the present tempo of change in the basic structure of this industry subsides a bit, we must expect continuing dislocations, competitive pressures and a struggle for profit.

Current performance is one measure of an industry's economic and financial prospects. If the domestic pulp and paper industry currently rates low in this department, it is because market dislocations and pressures are part of the price of progress.

Historical performance is a second gauge. How does the industry stack up under this criterion? During the mid-1930s, the financial performance of our industry, vis-a-vis other industries, was relatively worse than it is today. First, because our vast expansion program of the 1930s was based almost entirely upon strange and unfamiliar fibers. Second, because the new end-products introduced at that time were, in most cases, inferior and noncompetitive. Third, because the expansion of the 'thirties, although initiated with great vision, was actually undertaken with little thought for the details of new product development, market development, or distribution; this condition certainly does not hold true today!

In 1937, for example, "Fortune" had this to say about the paper industry:

"Its facade is extremely impressive. It possesses big beautiful mills. It has attracted the investment of a breathtaking amount of money . . . but, as a husband to the investor's money—it has been, with a few brilliant exceptions, an utter, complete unmitigated flop. The fact is that the paper industry is run, more or less logically, to conform to such a completely cockeyed set of economics that most people outside the industry believe that all paper men are crazy."

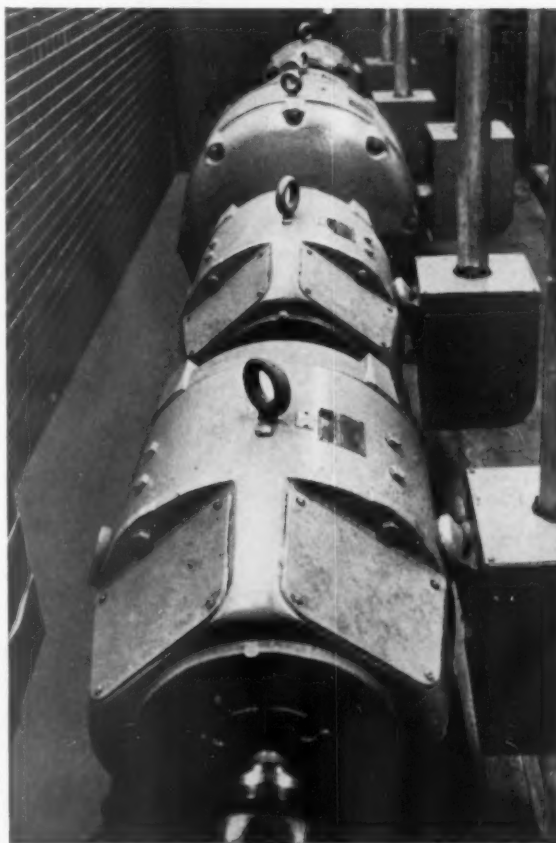
Twenty years later, the pulp and paper industry might quite properly have asked, "Who's crazy now?" Not only had its interim earnings compared favorably with other basic industries, but the average value of its publicly-listed shares had increased 19-fold, compared with a four-fold increase in the all-industry average.

And where was the financial community while all this was happening? Securely locked in the embrace of pre-war clichés. It was not until 1955 that it suddenly discovered that it had missed a "sleeping" And what was its belated reaction? It was, "Here's our money, do it again!"

We know and the financial community knows that, short of new wars, no industry, at least in our weight class, is ever going to "do it again" on anything like the same scale. To the credit of the financial community, it listened to this industry's leaders, and took a harder look at the facts.

At this particular juncture in the nation's economic development, there is a third and all-important test of economic prospects—namely, the preparedness of an industry to cope with the imminent challenge of peacetime normalcy. Measured against this standard, the pulp and paper industry scores high because timely structural changes have forged it—at some cost in current profit—into a strong, efficient, competitive force in the nation's economy. ■

## Westinghouse d-c generators supply power to world's fastest kraft paper machine



Two Westinghouse adjustable voltage d-c drives (330-kw for fourdrinier section; 250-kw for wet-felt section) power the wet end of the new Union Bag-Camp machine. Westinghouse exclusive insulation system assures extra service life for these important drives. Four Westinghouse Life-Line H d-c 40-kw generators power the dry-end helper drives, permit close regulation, faster accelerations, maximum performance. For more details on the new #7 machine, see the next page.

J-96162-5

Westinghouse



# Modern Aloyco casting operations pay off for customers !

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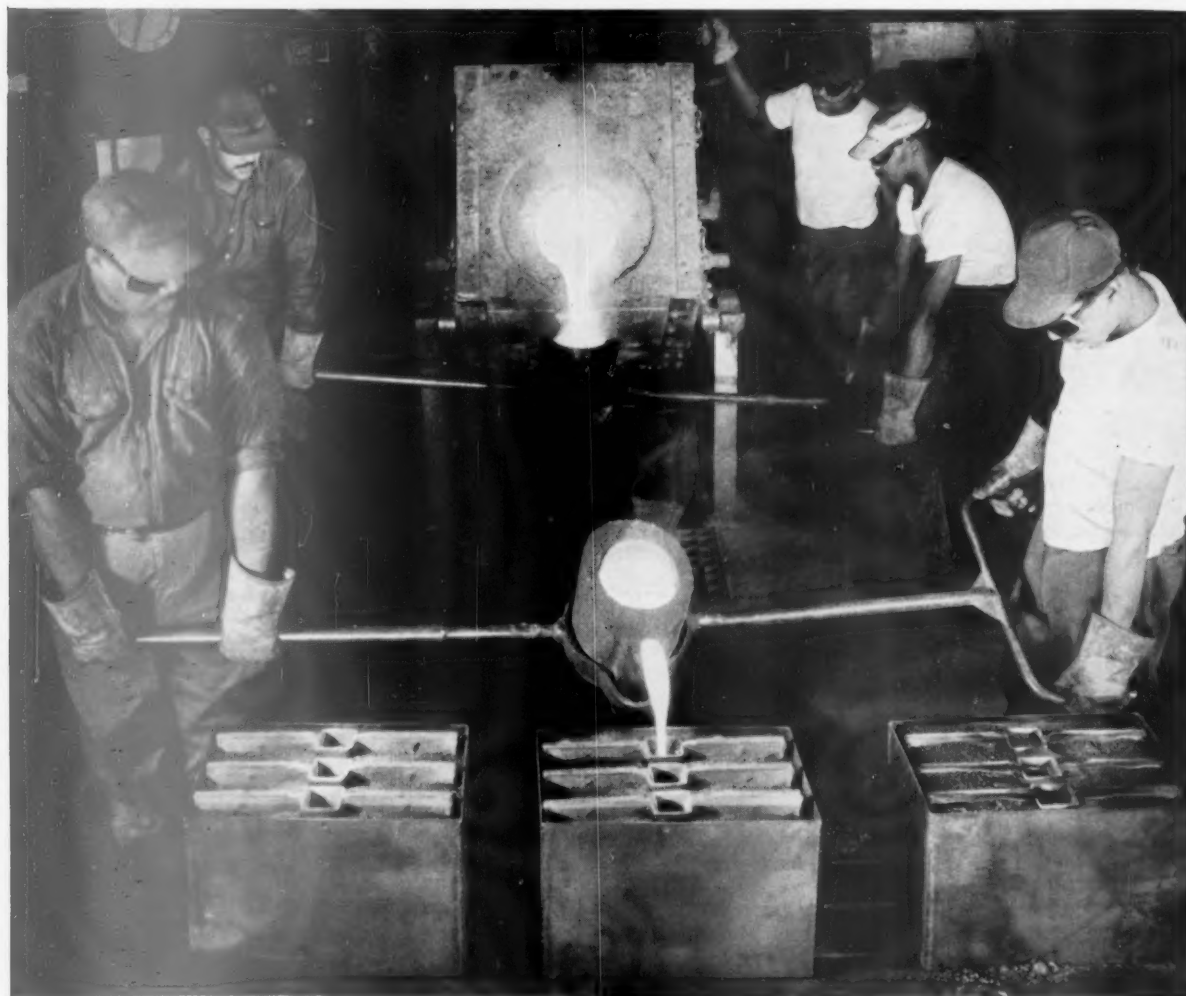
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Part of Aloyco's foundry facilities include modern shell moulding techniques which permit unusually high dimensional accuracy. Radiographic

inspection and dye penetrant testing are part of a comprehensive and rigid control program that assures castings of highest quality and uniformity.

**Chip Debarking—Finland**

LIIPI, OSMO. Debarking of chips. *Paperi ja Puu* 42, no. 4: 293-8 (April, 1960); [Finn.; Engl. sum.] *Abstr. Bull. I.P.C.* 31: 94.

Many troubles in the barking of round timber, especially small-sized logs, can be avoided if the wood can be barked after chipping. Two methods of removing the bark from birchwood chips were investigated, viz., mechanical treatment in an impact mill and separation of the bark by water soaking. Under certain conditions, bark can be loosened from birch chips by mechanical means, but the loosened bark must still be removed somehow from the chips; moreover, mechanical treatment tends to damage the chips by crushing (compression). The water-soaking method holds more promise, since the outer bark of birch is light and does not absorb water. Hence the bark-free chips will sink, whereas separated bark and chips with attached bark will float on the surface. By this method, 90-95% of the outer bark of birch chips could be removed. However, further studies and trials are needed before this method can be applied in practice.

**Pulp Yellowing—Germany**

SARTEN, PAULA, and WIEHRHEIM, SONJA. The yellowing of pulps during the mercerizing process. *Das Papier* 13, no. 19/2-: 496-503; no. 23/24: 592-600 (Oct., Dec., 1959). [Ger.; Fr. and Engl. sum.]

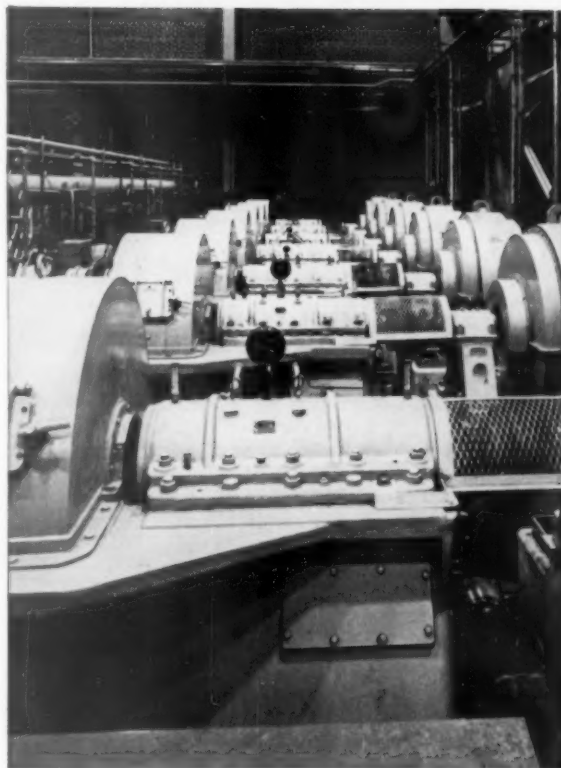
The homogeneity and swelling properties of a pulp are evaluated by means of the drop test with mercerizing liquor. In this simple way, a presorting and separating of suitable rayon pulps are accomplished without applying more expensive methods. The formation of yellowing substances is shown during the test with pressed steeping liquor, and a fundamental difference is found to exist between yellowing at normal and at elevated temperatures. According to quantitative investigations of pulp yellowing, the type of cellulose or hemicellulose and the amount of fines present are of prime importance, whereas the content in hemicellulose and  $\gamma$ -cellulose or a high copper number do not influence yellowing. It is shown how yellowing can be avoided or reduced during industry processes. Hardwood dissolving pulps require greater care than softwood celluloses. Yellowing can be avoided either by addition of an oxidation catalyst to the steeping liquor (below 45° C.) or by saturating the labile bonds and color-forming groups prior to aging. 49 ref.

**Tensile Strength—Germany**

BRECHT, WALTER, and ERFURT, HORST. New insights into the tensile strength of papers. *Das Papier* 13, no. 23/24: 58392 (Dec., 1959). [Ger.; Fr. and Engl. sum.]

An apparatus has been devised which permits the load-elongation properties of papers to be determined within the total range of 13-90% dry content. The instrument operates with a consistent extension velocity, which can be varied within wide ranges. The rheological behavior of initially wet papers was studied. The effects of fiber swelling, beating and the changing composition of structural elements during beating on the relation between dryness and tensile strength of papers were investigated. The results gave a comprehensive picture of the laws and variables governing the tensile strength of paper in various stages of dehydration. 17 ref. (Turn to page 109)

## Westinghouse a-c motors drive auxiliaries for world's fastest kraft paper machine

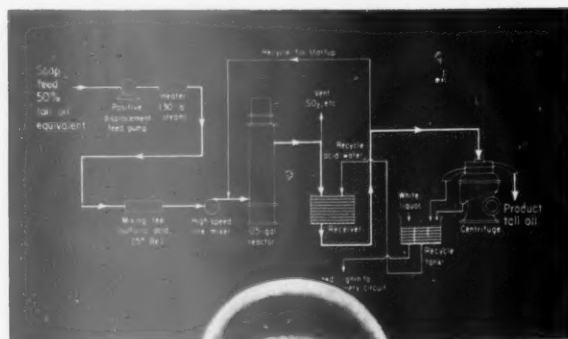


Westinghouse Lifeline A motors, of the totally enclosed, fan cooled type, were selected for the heavy duty service involved in powering numerous pumps and Sturtevant fans. Westinghouse motors, which combine complete accessibility with top performance, are used to power the seven refiners in use with Union Bag-Camp's new #7 machine. There are more details on the next page.

J-96162-6

**Westinghouse**






## The lowest cost process for highest quality TALL OIL

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DETAILS IN  
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## International Technical News

### Japanese Waxed Paper—Germany

KUNZL, RICHARD, and JASANI, S. R. The Japanese waxed paper method for the preparation of screen-printing stencils. *Textil-Praxis* 13, no. 8: 843-4 (Aug., 1958). [Ger.]

A thin paper of good transparency, impregnated with wax and coated twice with spirit lacquer, is placed on top of the design to be duplicated. The outlines of each color stencil are then scratched into the shellac coating with a needle. After reinforcement with up to 8 similar waxed-paper sheets (adhered to each other at the corners by ironing), the stencil assembly is cut through with a knife along the needle marks, and the areas that are to transmit ink during the printing process are removed. The multiple copies are separated from the assembly by trimming off the corners, and each stencil is affixed by ironing to a cotton-gauze fabric backing. Since the process is entirely dry, the low elasticity of this fabric need not be feared. In Asiatic countries, where labor is cheaper than capital investments, this process takes the place of the photochemical method used in Europe and America. Advantages and limitations of the waxed-paper method are outlined briefly.

### Dye-Adsorption—Russia

DASHKEVICH, B. N. and KARPINSKI, M. N. Zhur. *Priklad. Khim.* 32, no. 10: 2339-41 (Oct. 1959). [Russ.] Abstr. Bull. I. P. C. 30:933.

Samples of spent sulfite liquor were evaporated at 80, 100, 150 and 200° C, and the residues (constituting about 10% of the original samples) were carbonized at 350-400°. The carbon was deashed by treatment with 2N hydrochloric acid and washing with water. Without activation, the dye-adsorption capacity of this carbon was 34-93% that of a birchwood-derived activated carbon taken as a standard. Activation with steam at 850° increased its adsorption capacity for dyes to 160-195%. Sulfite carbon activated with carbon dioxide at 870° had an adsorption capacity for gases and vapors of 280-340% under static conditions and of up to 220% under dynamic conditions.

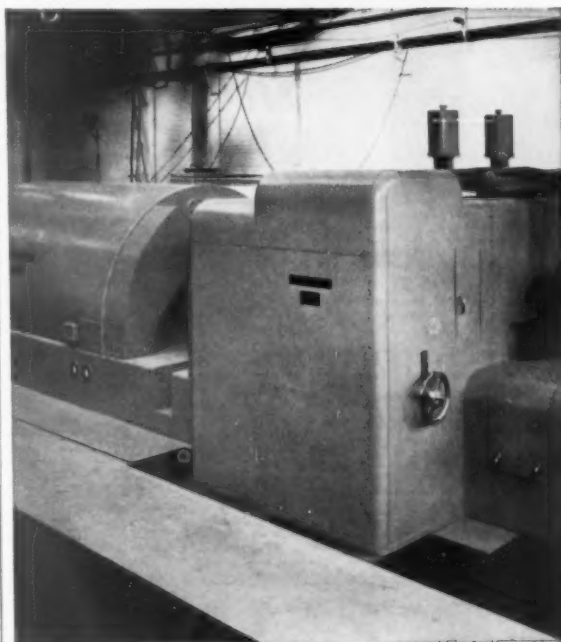
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## Westinghouse turbine generators power Union Bag-Camp #7 machine expansion

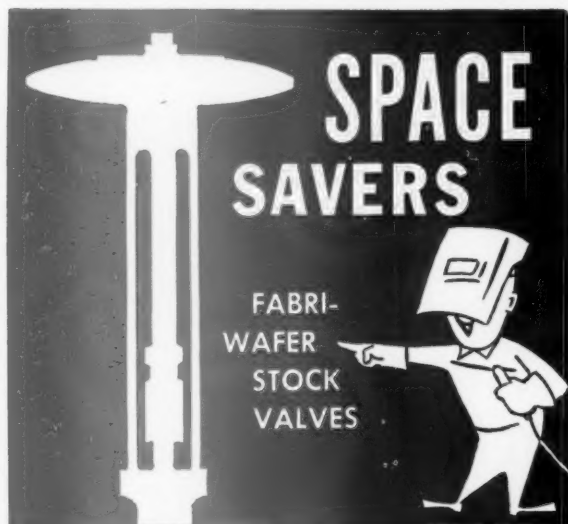


To handle the increased power load required by Union Bag-Camp's #7 machine, a new Westinghouse turbine generator (rated at 25,600 kva) was installed in the power plant at the Savannah, Ga., facility. Of the hydrogen-cooled non-condensing type, this Westinghouse turbine generator uses inlet steam at 1200 psi, 950°F, exhausting at 150 psi. For more information on the new #7 machine, see the next page.

J-96162-7

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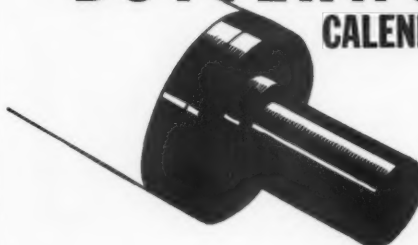
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## LETTERS to the editor

### Don't Blame Kennedy; It Was Our Error

—San Francisco.

Editor: PULP & PAPER is read most carefully from cover to cover in this office and we look forward to each issue with much interest. Occasionally we disagree with your editorials, but not sufficiently to warrant taking written exception to them.

But, please refer to the cover picture of the March 20, 1961 and the statement on the contents page. We appear to have a problem!! If Mr. Kennedy's goal is to change the name of Mt. St. Helens to Mt. Helens, the West demands another recount of those contested and uncertain votes of the last election!!

The economies in ink and space to be effected by eliminating the St. can never compensate for the injustice to this famous landmark of the Northwest. It ranks with those who call the Skid Road "Skid Row."—J. H. Jensen, *Western Knapp Engineering Co.*

Editor's note—To see majestic snow-capped Mt. St. Helens from an airplane or train, an automobile speeding over a highway, a fishing boat on a quiet lake, or a forest trail, is to experience an unforgettable thrill. We have witnessed her from all these vantage points—many times—and certainly agree that she should not be denied the "saintly" part of her name.

### More About Scudder Newsprint Oregon City, Ore.

Editor: Relative to the use of waste paper in the Scudder project for the manufacture of newsprint, it might be of interest that most of the pulp and paper on the West Coast is now being manufactured from waste—the waste being in the form of chips coming from nearby plywood and sawmills—Sam J. Robinson, *president, Publishers' Paper Co.*

### Likes "New" PULP & PAPER

—Port Edwards, Wis.

Editor: Congratulations on the new format for PULP & PAPER. It is much easier to read. It should bring you even more readers in the industry—if that is possible!—Ken Green

### Never Surprised by PULP & PAPER

—Fredericton, New Brunswick

Editor: I am an admirer of PULP & PAPER. I try to keep an eye out for items of particular interest, and am never surprised when it is found in PULP & PAPER. —John S. Bates, *Chairman, New Brunswick Water Authority.*

## Westinghouse engineering teamwork on world's fastest kraft paper machine

Union Bag-Camp's new #7 machine started up on schedule, experienced relatively few difficulties during the run-in period, has been operating at planned production rates ever since.

Engineering teamwork between Union Bag-Camp and all concerned insured that all equipment was integrated for optimum operating efficiency, easier installation. For both owner and builder, this meant simplified and coordinated engineering help and equipment delivery.

Gain the profits of this Westinghouse "one-source responsibility" on all of your paper machine modernization programs by reviewing your plans with your nearest Westinghouse Sales Engineer soon. For additional information on Westinghouse equipment for the paper industry, write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. *You can be sure . . . if it's Westinghouse.*

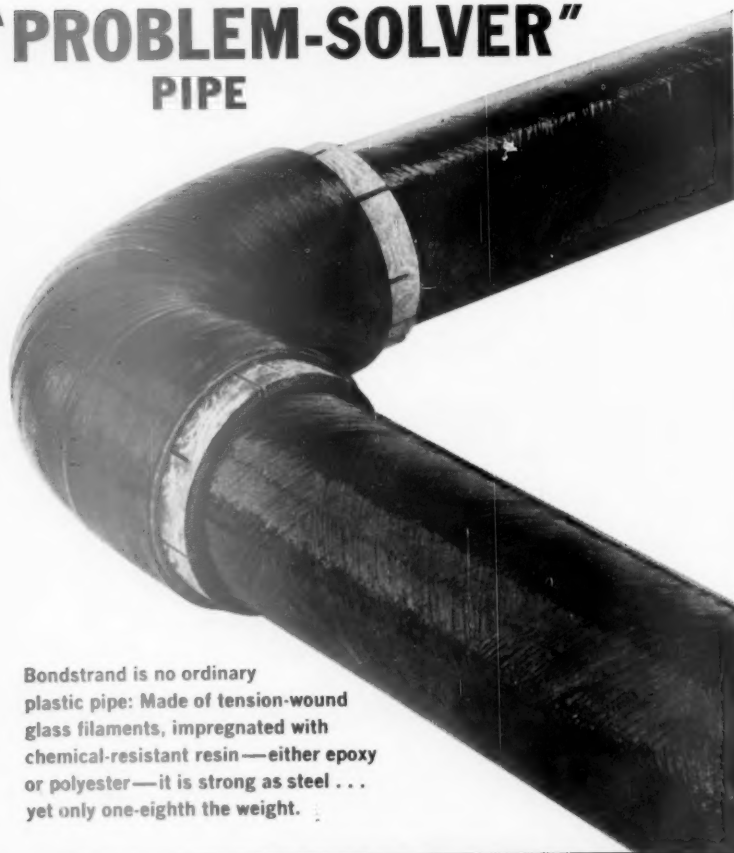
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Bondstrand installed 1959. No failure. Performance still rated excellent

Bondstrand installed 1958. Performance still rated excellent

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MILLER FREEMAN PUBLICATIONS

# The last word

## Money is Power—Federal or Private

Anyone who puts up the stakes in any venture certainly wants something to say about how it is run.

This is just as true of the Kennedy Administration as it is of the owner of a corner grocery store.

On page 11 of this issue are at least some partial answers to serious questions which have been troubling the responsible leaders of the American pulp and paper industry. Editor Albert W. Wilson has gone directly to authorized spokesmen very close to President Kennedy and Secretary of Agriculture Freeman to find out some details that were missing from the President's recent Message on American Agriculture—the parts dealing with the use and development of the nation's forest.

President Kennedy and Secretary Freeman are "not yet able to indicate what new legislation or other action may be needed" to implement their program for aiding small woodlot owners and bringing them into forest cooperatives.

In the White House report by Mr. Wilson in the March 20 issue, it will be recalled a presidential spokesman denied that subsidies are contemplated. But in the story in this issue it is clear that "incentives" and "assistance in marketing" are going to be emphasized.

Generally, pulp and paper industry leaders will also be glad to see, in this issue, the statement that the Kennedy-Freeman plan for aid to small woodlot or wood farm owners call for more state-employed foresters rather than federal, because the consensus in this industry is that the assistance of local people who know local conditions and answer to state authorities is best.

But it must be remembered that the Kennedy Administration is to share in putting up the money. As we said before, those who put up the money will want to say something about how it is spent. It's just natural.

## Two Men Left Their Marks, in Different Ways

The late Joe Conway started life in the banking profession, and then found himself thrust squarely into the paper manufacturing and sales business when he was called upon to take over the Hoberg Paper Mills in Green Bay, Wis., later named Charmin Paper Mills. He was tested quickly enough, in the fires of the depression, when he had to ask employees to take a pay cut, but he promised to get it back for them—and more.

Banking background notwithstanding, Joe Conway had the common touch and a grand talent for the proper handling of community and human problems in industry. No one did more than Joe Conway to create the wonderful relationship which the Wisconsin paper industry has with the people of Wisconsin—and this was especially true in his approach to the emotion-colored pollution problems.

When Joe died recently in his St. Petersburg, Florida, retirement home, a pioneer of good community relations for this industry passed on.

The other man who died just recently was Lester M. "Skipper" Start, veteran vice president in

charge of sales of Rice Barton Corp. until his retirement about eight years ago.

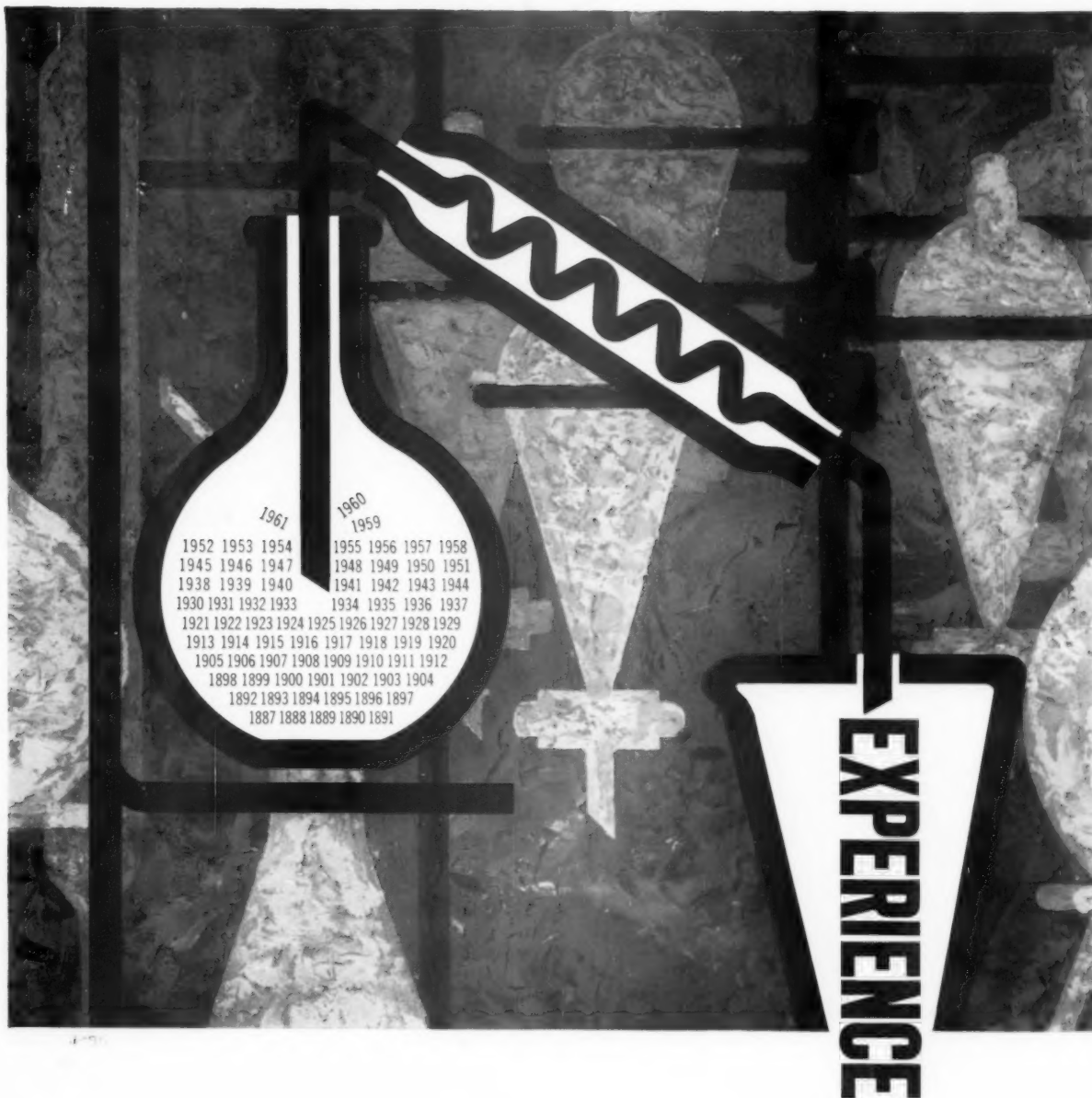
He had one thing in common with Joe Conway. They had many friends and these were staunch friends whose lives were more interesting because they knew them.

"Skipper" was one of the last of the old school of "peddlers" in the paper industry. But "peddlers" have an important role, sometimes, in industry progress. The pulp and paper machines he sold in the Northeast, the South and the Far West were important in establishing new far-reaching industry production and marketing trends.

"Skipper" Start will be remembered fondly by both his customers and his competitors.

## ... from the 'good old days'

*In the time of George Washington, fancy bags graced many parlors for collection of cloth scraps, needed to make paper. Because of the shortage of papermaking rags, it was against the law to be buried in anything but wool.*



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